

Technical Report No. 13

**RURAL HEALTH SERVICES AT SEGURIDAD
SOCIAL CAMPESINO FACILITIES: ANALYSES
OF FACILITY AND HOUSEHOLD SURVEYS**

ECUADOR

Submitted to:

USAID Mission To Ecuador

and

Policy and Sector Reform Division

Office of Health and Nutrition

Center for Population, Health and Nutrition

Bureau for Global Programs, Field Support and Research

Agency for International Development

By:

Denise DeRoeck

James Knowles, PhD

Tom Wittenberg

Abt Associates Inc.

Laura Raney

Consultant, Abt Associates Inc.

Polibio Cordova, PhD

CEDATOS

March 1996

HEALTH FINANCING AND SUSTAINABILITY (HFS) PROJECT

ABT ASSOCIATES INC., Prime Contractor

4800 Montgomery Lane, Suite 600

Bethesda, MD 20814 USA

Tel: (301) 913-0500 Fax: (301) 652-3916

Telex: 312638

Management Sciences for Health, Subcontractor

The Urban Institute, Subcontractor

AID Contract No. DPE-5974-Z-00-9026-00

ABSTRACT

The Health Financing and Sustainability (HFS) Project and the *Centro de Estudios y Datos* (CEDATOS) conducted an assessment of the health services of Ecuador's *Seguro Social Campesino* (SSC), a government social insurance program providing health care and other social services to the country's rural population, which is financed in part by payroll taxes paid by urban workers. A survey of nine SSC health clinics in various regions of the country and a survey of 1,017 households in the selected clinic areas provided information on the provision, utilization, and clients' perceptions of SSC services, the cost of services, and the demand for health services among the rural population. The major problems identified in the study include: difficulty in recruiting and retaining professional staff in the clinics, clinic catchment areas too small to support fully-functioning clinics, shortages of drugs and supplies, and as a result of these problems, low patient volume in many clinics. Unit costs for services varied as much as four-fold among clinics; those with the lowest costs tended to have larger numbers of member households and had greater patient volume. The demand analysis indicated a strong potential in expanding membership and increasing utilization of SSC services by improving the availability of medicines and other aspects of quality of care. The study results also indicate that these quality improvements could be financed by user fees, increases in the small monthly membership dues, or a combination of both. The report provides a series of recommendations on how the utilization of SSC services can be increased through quality improvements, changes in the management and financing of the system, and other reforms.

FOREWORD

This report was originally published in May 1995. This revised edition reflects the comments and corrections by *Seguro Social Campesino* (SSC) officials and other Ecuadoreans following a presentation of this report given at the Consejo Nacional de Salud in February 1996.

ACKNOWLEDGEMENTS

The field work for this study was directed by Dr. A. Polibio Córdova, General Manager for CEDATOS. The team investigators were economists Luz Clementina Ortiz O. and Myriam Viera M.; cost consultants Mónica Aguilar and Lilian de Aguirre; data collectors and supervisors Syliva Guaño V., Mr. Vicente Paccha, Mr. Juan Carlos Narváez, engineer Baldemar Alava, economist Rosa Pesántez and Mr. David Villamar. The data analysis was conducted by a team consisting of Mr. Carlos A. Córdova, Hugo Córdova, Washington Otavalo, Carlos Pulgar and Galo Freire.

The study team benefited greatly from the collaboration of former Seguro Social Campesino (SSC) directors, Rodrigo Dávila S., and Colonel Fausto Flores D.; and the Comisión de Apoyo consisting of Dr. Rodrigo Viñán (Medical Division), Dr. César Córdova (Program Division), Dr. Pedro Barreiro (Health Division), Mr. Nilo Marcías (Economic Division), and Mr. Marcelo Cevallos (Social Programs Division). This professional team helped CEDATOS in designing the study and in selecting the nine survey areas.

The Health Financing and Sustainability (HFS) Project and CEDATOS would like to acknowledge the contributions of Dr. John Novak (of Abt Associates, Inc.) and Dr. Dieter K. Zschock, an independent consultant. Dr. Novak participated in the initial start-up of the project and Dr. Zschock gave important recommendations during the preparatory stages of the project and provided the bibliography and documents related to similar studies carried out in other countries.

The team would also like to express its gratitude for the positive collaboration of the medical and paramedical staff that worked in the clinics that were surveyed. Finally, we would like to thank all of the local people, community leaders, and families who participated in the study.

TABLE OF CONTENTS

LIST OF EXHIBITS	iii
LIST OF GRAPHS	vii
ACRONYMS	viii
EXECUTIVE SUMMARY	1
1.0 BACKGROUND AND OBJECTIVES	9
1.1 BACKGROUND ON THE SEGURO SOCIAL CAMPEÑO (SSC)	9
1.2 PURPOSE AND OBJECTIVES OF THE STUDY	12
1.3 ORGANIZATION OF THIS REPORT	12
2.0 METHODOLOGY	15
2.1 DESIGN OF THE STUDY AND DATA COLLECTION INSTRUMENTS	15
2.2 TRAINING OF THE DATA COLLECTORS AND FIELD WORK	16
2.3 SAMPLING	16
2.3.1 Sampling Methodology	16
2.3.1.1 The Selection of Survey Sites	17
2.3.1.2 The Selection of Households	17
2.3.2 Description of the Sample	17
2.3.2.1 Survey Sites	17
2.3.2.2 The Household Sample	20
3.0 FINDINGS CONCERNING THE DELIVERY, UTILIZATION, AND PERCEPTIONS OF HEALTH SERVICES IN THE SURVEY AREAS	23
3.1 HEALTH NEEDS OF THE POPULATION IN THE SURVEY AREAS	23
3.2 THE PROVISION OF HEALTH CARE IN THE AREAS SURVEYED	25
3.2.1 SSC Primary Health Care Services	25
3.2.1.1 Clinic Facilities and Equipment	25
3.2.1.2 Access of the Population to the SSC Clinics	25
3.2.1.3 Clinical Staff and Work Hours	29
3.2.1.4 Availability of Clinical Staff during 1993	30
3.2.1.5 The Provision of Health Services by SSC Clinics	32
3.2.1.6 Staff Productivity	39
3.2.1.7 Training and Supervision	41
3.2.2 Other (Non-SSC) Health Services	43
3.3 CHARGES FOR HEALTH CARE SERVICES	44
3.3.1 User Fees at SSC Clinics	44
3.3.2 A Comparison of SSC User Fees with Those of Other Providers	47
3.4 UTILIZATION OF HEALTH SERVICES IN THE SURVEY AREAS	47
3.4.1 SSC Coverage of the Population	49
3.4.2 Utilization of SSC Services: Data from Clinical Records	51
3.4.3 Utilization of all Health Services: Data from the Household Survey	54

3.4.3.1	Utilization of Curative Care Services	54
3.4.3.2	Utilization of Preventive Care Services	59
3.5	USERS/PERCEPTIONS AND OPINIONS OF SSC AND NON-SSC HEALTH CARE SERVICES	62
3.6	THE FUTURE: CAN UTILIZATION AND COVERAGE OF THE SSC INCREASE, AND IF SO, WHAT CHANGES NEED TO BE MADE?	67
3.6.1	Willingness of Non-Members to Join the SSC	67
3.6.2	Willingness of Members to Pay an Additional Contribution for Quality and Other Improvements	67
3.6.3	Improvements that Need to be Made According to Respondents and SSC Staff Members	69
3.7	SUMMARY AND CONCLUSIONS	72
4.0	ANALYSIS OF THE DEMAND FOR HEALTH CARE AT SSC CLINICS	77
4.1	INTRODUCTION	77
4.2	POLICY OPTIONS	78
4.3	METHODOLOGY	81
4.4	FINDINGS	82
4.4.1	General Findings	83
4.4.2	Findings on the Specific Factors Affecting the Demand for SSC Services	83
4.5	POLICY IMPLICATIONS	85
5.0	COST ANALYSIS	89
5.1	INTRODUCTION AND OBJECTIVES	89
5.2	METHODOLOGY	89
5.3	FINDINGS	91
5.3.1	Clinic-Level Costs by Budget Categories	91
5.3.2	Breakdown of costs by Type of Service	97
5.3.3	Total and Unit Costs of Medical (Non-Dental) Care	97
5.3.4	The Costs of Dental Care	102
5.3.5	Marginal Costs of Providing Clinical Care	102
5.3.6	The Costs of Improving the Quality of Health Care	105
5.4	SUMMARY AND CONCLUSIONS	105
5.5	POLICY IMPLICATIONS	107
6.0	CONCLUSIONS AND RECOMMENDATIONS	109
6.1	CONCLUSIONS	109
6.2	RECOMMENDATIONS	113
6.3	AREAS FOR FURTHER RESEARCH	115
ANNEXES:		
	ANNEX 1: FACILITIES SURVEY INSTRUMENT	117
	ANNEX 2: HOUSEHOLD SURVEY QUESTIONNAIRE	123
	ANNEX 3: DETAILS ON THE COSTING METHODOLOGY	133
	REFERENCES	137

LIST OF EXHIBITS

- EXHIBIT 2-1 CHARACTERISTICS OF SELECTED SAMPLE SITES
- EXHIBIT 2-2 SIZE OF HOUSEHOLD SURVEY SAMPLE
- EXHIBIT 2-3 BREAKDOWN OF HOUSEHOLDS IN AREA AND IN SURVEY SAMPLE BY SSC ENROLLMENT STATUS
- EXHIBIT 2-4 SOCIO-ECONOMIC CHARACTERISTICS OF HOUSEHOLD SAMPLE
- EXHIBIT 3-1 THE MOST COMMON ILLNESSES REPORTED BY HOUSEHOLD MEMBERS DURING THE TWO MONTHS PRECEDING THE SURVEY: PERCENT OF ALL REPORTED ILLNESSES
- EXHIBIT 3-2 DATA ON INFRASTRUCTURE, STAFF AND HOURS OF SSC CLINICS INCLUDED IN THE SURVEY, 1993
- EXHIBIT 3-3 ASSESSIBILITY OF SSC CLINICS AND OTHER HEALTH FACILITIES TO MEMBER HOUSEHOLDS
- EXHIBIT 3-4 AVAILABILITY OF PHYSICIANS IN 1993 AT THE NINE CLINICS SURVEYED
- EXHIBIT 3-5 BREAKDOWN OF MEDICAL CARE VISITS TO SSC CLINICS SURVEYED, 1993
- EXHIBIT 3-6 NUMBER OF REPRODUCTIVE HEALTH VISITS MADE IN 1993 TO THE SSC SAMPLE CLINICS
- EXHIBIT 3-7 BREAKDOWN OF PHYSICIANS' RECORDED TIME (IN HOURS) BY TYPE OF ACTIVITY AT SURVEYED CLINICS, 1993
- EXHIBIT 3-8 BREAKDOWN OF NURSE AUXILIARIES' RECORDED TIME (IN HOURS) BY TYPE OF ACTIVITY AT SURVEYED CLINICS, 1993
- EXHIBIT 3-9 REFERRALS: NUMBER AND PERCENT OF REFERRALS FROM TWO SOURCES: TWO-MONTH RECALL DATA ON HOUSEHOLD SURVEY AND CLINIC RECORDS FOR ALL OF 1993
- EXHIBIT 3-10 ESTIMATED NUMBER OF PATIENTS SEEN BY THE PHYSICIAN PER HOUR AND AVERAGE TIME SPENT WITH EACH PATIENT
- EXHIBIT 3-11 CONSULTATION CHARGES (IN SUCRES) SSC MEMBERS REPORTED PAYING DURING VISITS MADE TO SSC CLINICS DURING THE TWO MONTHS PRECEDING THE SURVEY, BY CLINIC

- EXHIBIT 3-12 CHARGES (IN SUCRES) SSC MEMBERS REPORTED PAYING FOR DRUGS AT SSC CLINICS IN THE TWO MONTHS PRECEDING THE SURVEY, BY CLINIC**
- EXHIBIT 3-13 AVERAGE FEES PAID FOR CONSULTATIONS AND MEDICATIONS BY TYPE OF CARE SOUGHT AND BY SSC MEMBERSHIP STATUS**
- EXHIBIT 3-14 SSC ENROLLMENT RATES: BREAKDOWN OF HOUSEHOLDS IN SURVEY AREAS BY THOSE ENROLLED IN SSC, FORMERLY ENROLLED, AND NEVER ENROLLED**
- EXHIBIT 3-15 BREAKDOWN OF HOUSEHOLD SURVEY SAMPLE BY INCOME LEVEL AND SSC MEMBERSHIP STATUS**
- EXHIBIT 3-16 ESTIMATED PATIENT VOLUME OF SSC SAMPLE CLINICS DURING 1993: AVERAGE NUMBER OF CONSULTATIONS CONDUCTED BY PHYSICIANS AND NURSE AUXILIARIES**
- EXHIBIT 3-17 ESTIMATED NUMBER OF VISITS MADE TO SSC CLINICS IN 1993 PER SSC-AFFILIATED HOUSEHOLD AND PER SSC MEMBER**
- EXHIBIT 3-18 WHERE SSC MEMBERS SOUGHT HEALTH CARE: PROPORTION OF ILLNESSES REPORTED AMONG SSC FAMILY MEMBERS DURING THE TWO MONTHS PRECEDING THE SURVEY BY THE SITE WHERE CARE WAS SOUGHT**
- EXHIBIT 3-19 WHERE PERSONS NOT BELONGING TO THE SSC SOUGHT HEALTH CARE: PERCENTAGE OF ILLNESSES REPORTED AMONG NON-SSC FAMILY MEMBERS DURING THE TWO MONTHS PRECEDING THE SURVEY BY THE SITE WHERE CARE WAS SOUGHT**
- EXHIBIT 3-20 WHERE SSC MEMBERS SAY THEY USUALLY SEEK HEALTH CARE WHEN THEY DON'T USE SSC FACILITIES**
- EXHIBIT 3-21 REASONS GIVEN FOR WHY SSC MEMBERS SEEK HEALTH CARE FROM NON-SSC PROVIDERS**
- EXHIBIT 3-22 WHERE SSC FAMILY MEMBERS RECEIVED WELL-BABY AND IMMUNIZATION SERVICES: NUMBER OF SERVICES RECEIVED DURING THE TWO MONTHS PRECEDING THE SURVEY, BY PROVIDER**
- EXHIBIT 3-23 WHERE SSC FAMILY MEMBERS RECEIVED REPRODUCTIVE HEALTH SERVICES: NUMBER OF SERVICES RECEIVED DURING THE TWO MONTHS PRECEDING THE SURVEY, BY PROVIDER**
- EXHIBIT 3-24 ADVANTAGES OF USING SSC SERVICES ACCORDING TO SSC MEMBERS**
- EXHIBIT 3-25 GREATEST DISADVANTAGE OF USING SSC SERVICES ACCORDING TO SSC MEMBERS**

- EXHIBIT 3-26 RATINGS OF SSC SERVICES BY SSC MEMBERS: PROXIMITY FROM HOME AND HOURS OF OPERATION
- EXHIBIT 3-27 RATINGS OF SSC SERVICES BY SSC MEMBERS: TREATMENT RECEIVED AND AVAILABILITY OF MEDICINES
- EXHIBIT 3-28 WHERE SSC MEMBERS OBTAINED MEDICINES: PERCENTAGE OF SSC MEMBERS SURVEYED WHO REQUIRED MEDICINE DURING THEIR LAST VISIT TO AN SSC CLINIC, BY THE SOURCE OF MEDICINE
- EXHIBIT 3-29 WOULD NON-MEMBERS CONSIDER JOINING THE SSC?: RESPONSES OF FORMER MEMBERS AND THOSE NEVER ENROLLED
- EXHIBIT 3-30 WILLINGNESS OF SSC MEMBERS TO PAY A GREATER MONTHLY CONTRIBUTION FOR IMPROVED SERVICES: PERCENT OF RESPONSES FROM SSC MEMBERS (IN SUCRES)
- EXHIBIT 3-31 HOW SSC MEMBERS DEFINE "BETTER SERVICES" FOR WHICH THEY WOULD BE WILLING TO PAY A HIGHER MONTHLY CONTRIBUTION
- EXHIBIT 4-1 EXPECTED IMPACT OF POSSIBLE POLICY CHANGES ON SSC UTILIZATION, MEMBERSHIP, COSTS, AND REVENUE
- EXHIBIT 4-2 CONCLUSIONS FROM THE DEMAND ANALYSIS WITH RESPECT TO THE IMPACT OF POLICY CHANGES ON SSC UTILIZATION, MEMBERSHIP, AND FINANCIAL SUSTAINABILITY
- EXHIBIT 5-1 COST COMPONENTS OF THE NINE SSC SAMPLE CLINICS, 1993, IN SUCRES
- EXHIBIT 5-2 ANALYSIS OF COMPONENTS OF SSC CLINIC COSTS FOR 1993 PER SSC MEMBER HOUSEHOLD, IN SUCRES
- EXHIBIT 5-3 BREAKDOWN OF COSTS BY TYPE OF SERVICE AND BY CLINIC, 1993 (IN SUCRES)
- EXHIBIT 5-4 CLINICAL (NON-DENTAL) CARE: TOTAL COSTS AND COSTS PER VISIT OF CLINICAL CARE (CURATIVE AND PREVENTIVE) BY MEDICAL PERSONNEL AND BY CLINIC, 1993
- EXHIBIT 5-5 CURATIVE CARE: TOTAL COSTS AND COSTS PER VISIT BY MEDICAL PERSONNEL AND BY CLINIC, 1993 (IN SUCRES)
- EXHIBIT 5-6 PREVENTIVE CARE: TOTAL COSTS AND COSTS PER VISIT BY MEDICAL PERSONNEL AND BY CLINIC, 1993 (IN SUCRES)
- EXHIBIT 5-7 COMPONENTS OF DENTAL SERVICES COSTS IN 1993 (IN SUCRES)

EXHIBIT 5-8 DENTAL SERVICES: TOTAL COSTS AND COSTS PER VISIT OF ALL DENTAL SERVICES, BY CLINIC, 1993 (IN SUCRES)

EXHIBIT 5-9 TOTAL COSTS AND COSTS PER VISIT OF DENTAL SERVICES, BY SERVICE AND BY CLINIC, 1993 (IN SUCRES)

EXHIBIT 5-10 MARGINAL COSTS OF CLINICAL CARE IN 1993 (IN SUCRES)

LIST OF GRAPHS

- GRAPH 2-1 LOCATION OF SSC CLINIC SURVEY SITES IN ECUADOR, SSC SURVEY, 1995
- GRAPH 3-1 BREAKDOWN OF MEDICAL STAFF'S RECORDED TIME BY TYPE OF ACTIVITY AT SURVEYED CLINICS, 1993
- GRAPH 3-2 PROPORTION OF SSC RESPONDENTS WILLING TO PAY A CONTRIBUTION OF MORE THAN 1,000 SUCRES PER MONTH FOR QUALITY IMPROVEMENTS BY INCOME GROUP
- GRAPH 5-1 AVERAGE COST BREAKDOWN OF SSC CLINICS BY LINE ITEM, 1993
- GRAPH 5-2 COMPARISON ACROSS SSC CLINICS OF COST BREAKDOWN BY LINE ITEM, 1993
- GRAPH 5-3 AVERAGE COST BREAKDOWN BY TYPE OF SERVICE AND BY CLINIC, 1993

ACRONYMS

CEDATOS	Centro de Estudios y Datos
HFS	Health Finance and Sustainability Project
IESS	Instituto Ecuatoriano Seguro Social
INEC	National Statistics Institute
MSP	Ministry of Public Health
SSC	Seguro Social Campesino
TBA	Traditional Birth Attendants
USAID	United States Agency for International Health

EXECUTIVE SUMMARY

BACKGROUND

The *Seguro Social Campesino* (SSC) is a government program that provides medical and dental care, disability payments, retirement pensions, and burial assistance to the rural population of Ecuador. The program, which is administered by the *Instituto Ecuatoriano Seguro Social (IESS)* -- Ecuador's social security system for urban workers -- is financed by a payroll tax paid by urban workers as well as by contributions from the government's general budget and investment income.

The SSC currently provides primary health care outpatient services to approximately 158,000 rural households (or an estimated 882,000 individuals) -- roughly 7.5 percent of Ecuador's total population and 17.5 percent of its rural population -- through a network of 549 small health clinics (*dispensarios*) located primarily in remote rural areas. SSC clinics are established in response to requests from communities through community organizations and cooperatives, such as large landholders and agro-industrial cooperatives, and community participation in building and maintaining the clinic, donating the land, and planning local activities is a primary component of the program. Clinics are staffed by a part-time physician, a full-time nurse auxiliary, and a dentist who works on an interim basis (usually two months per year per clinic). In addition to providing basic medical and dental outpatient services, including minor surgery, and maternity, pre-and post-natal care, clinic staff perform outreach services in participating communities, including health education and follow-up home visits. Patients requiring hospitalization or more sophisticated care are referred to IESS hospitals in the urban areas. All health care services and medicines, including care in IESS facilities, are provided free of charge to members. SSC member households do contribute, however, a small monthly membership dues (660 sucres at the time of the survey), which makes up less than five percent of the program's budget.

Despite considerable support for the program from the rural population, utilization rates of SSC health services per members reportedly decreased by 50 percent from 1980 to 1993. Shortages of drugs and medical staff (which have left many clinics without physicians for several months at a time) have undoubtedly contributed to this decrease in utilization, as have the reportedly uneven quality of services. The program has also received criticism for its reportedly heavy emphasis on curative versus preventive health care, as well as on its dependency on government subsidies. Given these problems, the government is interested in reforming the SSC in order to greatly improve its coverage among the rural population, increase utilization among its members, and improve its financial viability. This study, which was carried out by the HFS Project and the Ecuadorean research firm, *Centro de Estudios y Datos (CEDATOS)* upon requested by the SSC through USAID/Quito, was conducted to provide the SSC with information on its service delivery system, costs, and the demand for health care to assist the program in developing policies to best meet these goals.

OBJECTIVES

The purpose of this study was to assist the SSC and USAID/Quito to identify the major constraints and problems with the SSC health service delivery system, and to determine how the current health services and financing mechanisms can be improved in order for the SSC to meet its goals of expanding coverage and utilization.

The major objectives were to:

1. Assess the SSC's effectiveness in meeting the health needs of its affiliates by examining the current provision of health services at the clinic level, the utilization of SSC services, the productivity of clinic staff, referral rates, other aspects related to service provision, and the perceptions of the population regarding SSC services and what improvements are needed.
2. Identify the factors which determine the demand for health care and the choice of provider among both the insured and uninsured populations.
3. Estimate the real costs of providing health care services at SSC facilities (both total and unit costs), compare costs across clinics, and analyze the major factors contributing to the cost differentials among clinics.
4. Determine the costs of increasing the utilization of SSC services by calculating the costs of improving the quality of the services currently offered to an acceptable standard.
5. Determine the willingness of the insured population to pay a higher share of the costs of the health care they receive.
6. Identify effective policy options to increase the utilization of SSC health facilities and to finance the expansion of SSC services to a larger segment of the rural population, particularly the poor.

METHODOLOGY

Data for this study was collected through three mechanisms: 1) interviews and document reviews at the central and regional offices of the SSC; 2) a survey of nine facilities, which included staff interviews as well as the collection of cost data, the review of staff time/activity records, and an assessment of drug/equipment inventories; and 3) a survey of 1,017 both SSC-affiliated and non-affiliated households in the catchment areas of the selected clinics. The household survey contained recall questions on recent illnesses, sources of health care and costs related to the illness; sources of preventive health care; perceptions on the quality of SSC and other health services; and the willingness of member households to pay for improvements in the quality of care. Focus group discussions with community leaders were also conducted in the selected clinic sites. Data collection took place between July 27 and August 19, 1994.

The study used a case study approach to examine the SSC program under varying environments and conditions. The nine clinic sites were chosen to represent Ecuador's three geographic zones, as well as the country's diverse ethnic/language groups, religions, occupations, and socio-economic levels. Four of the sample clinics are in the mountain (*sierra*) region, three are in the coastal region, and one is in the Amazon (*oriente*). Consequently, the selected clinics are not necessarily representative of the SSC program as a whole, and, similarly, the household survey sample is not representative of Ecuador's rural population.

For the data analysis, descriptive statistics concerning the utilization and perception of services, patient volume, and other information were generated from both the facilities and household survey data. An analysis of the demand for health care was also conducted using multi-variant analysis of the household survey data under three different models (a detailed report of the demand analysis (Knowles,

1995) is available under separate cover). The study of the costs of health care at SSC clinics used cost data from both the central and clinic levels to estimate total and unit costs of various health services, using the same methods used for earlier health care cost studies in Ecuador. The cost estimates of SSC services do not include the administrative and supervision costs of the central and regional level, which were not possible to obtain during this study.

MAJOR FINDINGS AND CONCLUSIONS

- ▲ *Coverage of the Population:* Five of the nine sample clinic sites met the minimum target of 300 SSC member households and four did not, either because of low enrollment rates or because of low numbers of household in the catchment areas. Enrollment rates in the survey sites ranged from 43 to 81 percent of area households, and averaged 60 percent. These data show that in many cases, there is considerable potential to increase the number of member households by increasing enrollment rates.
- ▲ *Staffing:* The SSC appears to have difficulty recruiting and retaining medical staff, especially physicians. Only four of the nine sample clinics had physicians throughout 1993, and four others had no physician for six or seven months of the year.
- ▲ *Patient Volume:* Physicians saw on average only ten patients per day on the days when they worked at the clinic, and nurse auxiliaries saw around eight per day. Patient volume was lowest in the mountain region and the Amazon (around five to eight physician visits per day) and highest in the coastal region.
- ▲ *Utilization of SSC Services:* Recall data indicate that SSC members are considerably more likely to seek care for illnesses than non-members.
- ▲ *Preventive Health Services:* Although SSC clinics were shown in the recall data to be the source of reproductive health services for 75 percent of SSC members in the survey, and were the source of well-baby services for 56 percent, the clinics do not have sufficient equipment and supplies to provide immunizations, family planning, and other preventive health services on a routine basis. Clinic records show that few preventive services were, in fact, provided by the nine sample clinics.
- ▲ *Productivity of Clinic Staff:* Clinics records show that physicians and nurse auxiliaries spent on average only 60 percent of their work time providing health care. This could largely be due to the low patient volume in several of the clinics. These data suggest that increasing utilization of the clinics will not necessarily require increasing the staff of the clinics.
- ▲ *Referrals to IESS Facilities:* Records from the nine sample clinics showed that physicians referred, on average, around five percent of their patients to IESS facilities, ranging from 1.7 to 8.0 percent. In the demand analysis, SSC membership rates were positively related to referral rates, indicating that one reason people join the SSC is to gain access to IESS facilities through referrals.

- ▲ *Quality of Care:* Shortages of essential drugs and medical supplies are perceived by SSC members and staff as the greatest problem with SSC services, with 60 percent of household survey respondents rating drug availability as fair or poor. A quick inventory of medicines conducted during the study confirmed this perception; none of the nine clinics came close to having the 71 medicines on the SSC essential drug list in stock, and three of the nine had virtually no drugs on hand. Respondents also cited the limited hours of availability of medical staff as a major problem, but generally expressed satisfaction with the abilities of the medical professionals and the treatment that they received.
- ▲ *Training and Supervision:* Both in-service training and supervision of medical staff at SSC clinics were found to be inadequate. Physicians received only 18 hours of training, on average, in 1993, and most of it focused on urban-based hospital care instead of outpatient primary care. Five of the nine physicians interviewed received no supervisory visits since their arrival at the clinic, and nurse auxiliaries received only one or two visits during the year.
- ▲ *Health Care Costs:* The estimated clinic-level costs of SSC services ranged from 43,000 sucres (US\$21.00) to around 163,000 sucres (US\$80.00) per SSC member household for the year 1993, with an average of 69,000 sucres (US\$33.74). Visits to a physician averaged 6,801 sucres (US\$3.32), ranging from 3,804 sucres (US\$1.86) to as much as 12,667 sucres (US\$6.19), and visits to nurse auxiliaries and dentists cost, on average, around two-thirds as much as visits to physicians. Clinics with the lowest unit costs were generally those with the largest membership size and patient volume. Central and regional-level administrative and supervisory costs were not included in the cost estimates.
- ▲ *Out-of-Pocket Costs to Consumers:* The out-of-pocket costs for health care of SSC members were only around one-third those of non-members. Eighty percent of these costs were for drug purchases.
- ▲ *The Potential for Increasing Utilization of SSC Health Services:* According to the demand analysis:
 - ▲ Improving the perceived quality of care at SSC clinics, especially by improving drug availability and increasing physician hours, would significantly increase both membership size and utilization of SSC services. A 14 percent increase in perceived quality of care (as measured by an index) would theoretically result in a 33 percent increase in utilization of services.
 - ▲ Increasing referral rates would also potentially increase SSC membership, although it would involve additional costs. Conversely, severely reducing referral rates could result in a decline in SSC membership.
 - ▲ Increasing out-of-pocket costs modestly would have little negative impact on utilization of SSC services. Increasing membership dues would also not seriously affect membership.

- ▲ *Estimated Costs of Increasing Utilization:* To increase utilization by one-third by improving quality, SSC clinics would have to pay, on average, an additional 8,600 sucres (US\$4.20) per member household in drugs and supplies. This is the equivalent of a 12.5 percent increase in the average clinic's overall costs. It is assumed that this increase in utilization will not incur additional personnel costs because of the current under-utilization of medical staff in most of the clinics.

- ▲ *Paying for Quality Improvements:* According to the demand analysis, imposing user fees to cover the costs of these quality improvements would result in a modest (five percent) decrease in the utilization of SSC services. This decrease would be more than offset by the estimated 33 percent increase in utilization resulting from these quality improvements. The estimated overall effect of user fees to pay for quality improvements, therefore, would be a 28 percent increase in utilization. The survey also showed that the majority of SSC members are willing to pay for a modest (200 to 300 sucres) increase in the monthly membership dues, which could cover more than one-third of the estimated cost of these quality improvements. These results lead one to conclude that the most effective and feasible means of increasing utilization of SSC services is to improve the quality of care, especially the availability of drugs, and to finance these quality improvements through user fees, increased membership dues, or a combination of both.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

1. **Pay incentives to increase the stability of services.** In order to improve the recruitment and retention levels of physicians and other medical staff, the SSC should consider offering them incentives, such as bonuses for working in remote rural locations. Incentives might be based on the level of productivity, the delivery of outreach and preventive services, or other indicators of performance that correspond to national health objectives.

2. **Improve the quality of care by increasing the availability of drugs and supplies at the clinics.** The SSC should focus on substantially improving the availability of drugs and medical supplies at SSC clinics, since the analyses show that among various quality improvements, this one intervention will have the greatest effect on attracting new members and on increasing the utilization of the clinics.

3. **Generate revenues at the clinic level to finance quality improvements.** The funding from the SSC is at present not adequate to pay for quality improvements, such as improved drug supplies. To fill the funding gap, the SSC could consider allowing or even mandating that clinics introduce modest user fees for consultations and/or drugs, and use the recovered funds to replenish their drug supplies, thereby creating clinic-based Revolving Drug Funds (RDFS). Another option would be to increase the monthly membership dues (to, for example 1,000 to 1,200 sucres), and to allow the individual clinics to keep this added revenue to purchase drugs and other necessities (i.e. revenue sharing). A third option could be to finance drug purchases and other improvements with a combination of user fees and increases in membership dues. This option will allow user

fees to increase more gradually and to stay at more modest levels, which should reduce their negative impact on utilization.

4. **Establish a separate drug and medical supply system for the SSC.** To ensure that SSC clinics' drug needs are met and accorded a high priority, the SSC should consider establishing a separate drug and medical supply system, independent from the IESS. If clinic-based Revolving Drug Funds are established, the clinics could purchase their drugs from the SSC. The SSC would also need to supply each clinic with an initial free stock of drugs, which the clinic would charge to patients in order to build up sufficient capital for the RDFs. The clinics should also be given the option of buying drugs from other sources (i.e. on the open market), if the SSC is not able to meet their demands in a timely fashion.
5. **Decentralize the management of the SSC.** The establishment of clinic-based Revolving Drug Funds or other mechanisms to effectively improve quality of care will require decentralizing the management and decision-making of the SSC. In order to create the right incentives for clinics to implement quality improvements, each clinic must be given the authority to manage its own recovered funds (i.e. user fees or a portion of membership dues), and to make its own decisions, within established guidelines, on how these funds can be used. Community members, such as leaders of the associations belonging to the SSC, should be involved in these decisions. The SSC should consider providing training in financial management and accounting to clinic staff to ensure that recovered funds are properly managed.
6. **Increase the emphasis on preventive health care.** The SSC should consider providing all clinics with sufficient supplies of vaccines and refrigerators in order to be able to offer immunization services on a routine basis. The SSC should also provide in-service training to all staff in various aspects of preventive health care, including family planning service delivery, immunizations, health education/communications methods, and other appropriate topics. The SSC central and regional levels should find other ways of actively encouraging clinics to increase their preventive health activities, by, for example, supplying them with IEC materials (posters, pamphlets, etc.) and field-based technical assistance. The role of SSC clinics in the provision of family planning should be expanded in conjunction with the USAID-funded family planning project. The clinics should be provided with sufficient supplies of contraceptives, which can be purchased with recovered funds. Consideration might also be given to linking the SSC with one or more of Ecuador's strong non-government organizations (NGOs) that provide family planning and reproductive health services. Financing support for initiatives in preventive health care may be available to the SSC from donor agencies.
7. **Offer performance-based incentives for clinics.** As a means of improving the motivation for clinics to boost utilization and membership, the SSC could offer clinics performance-based incentives. For example, clinics showing the greatest gains in patient volume or membership, or an increase in preventive health activities, could be given new or additional equipment, or an additional free stock of drugs to further capitalize their Revolving Drug Funds. The additional costs that these incentives would entail could be partially offset by the added revenues resulting from increased membership and utilization. Consideration would have to be made, however, of the difficulty of clinics

in more remote or traditional areas of increasing membership or utilization, as compared with clinics in more densely-populated areas.

8. **Invest in the development of clinic personnel.** The SSC should provide more opportunities for in-service training of its clinical staff. The training should be directly relevant to the services that SSC clinics provide, and should be a key part of SSC efforts to improve the quality of services. Training areas could include family planning, IEC/communications, diagnostic-treatment protocols, and other relevant topics.
9. **Strengthen supervisory support for SSC clinics.** SSC's supervision system should be substantially improved. Visits to clinic staff should be more frequent (e.g. three to four times per year, depending on need) and be based on a regular schedule. Supervisors should receive periodic refresher training in effective supervision, communications techniques, and so forth to enhance their effectiveness. Regional or provincial-based supervision (versus central-based) would help ensure the frequency of the supervision, as well as its appropriateness. Supervision tools, such as checklists, should be developed, if they do not currently exist, or if they do, be reviewed and revised to enhance their effectiveness.
10. **Conduct a pilot test to introduce reforms of the SSC.** Before introducing reforms on a nation-wide basis, the SSC might consider conducting a carefully monitored experiment in selected geographic areas in which reforms, such as those suggested in this report, would be tested and their impact carefully assessed. Lessons learned from the pilot test would be incorporated into the design for the nation-wide implementation of reforms.

AREAS FOR FURTHER RESEARCH

1. Future analyses of the cost of SSC services should be conducted, and should include estimates of central and regional-level costs.
2. Further research on referrals from SSC to IESS facilities should be carried out, including referral patterns, referral rates, and the costs of referrals.
3. Research should be conducted to determine the extent to which clinics are informally charging user fees, what types of fees are being charged and for which types of patients, and the uses of these recovered funds.
4. Since it was beyond the scope of this study to assess the degree of overlap and duplication of services between the SSC and the MSP, this should be investigated in order to determine how and to what extent the SSC should collaborate with the MSP for the provision of services at the local level.

1.0 BACKGROUND AND OBJECTIVES

1.1 BACKGROUND ON THE SEGURO SOCIAL CAMPESINO (SSC)

The *Seguro Social Campesino* (SSC) is a government program that provides medical and dental care, disability payments, retirement pensions and burial assistance to the rural population of Ecuador. The SSC program is administered through a division of the government of Ecuador's *Instituto Ecuatoriano Seguro Social (IESS)*. IESS provides similar, but a more comprehensive set of social services to the urban population. The SSC is considered administratively independent from IESS but in practice lacks clear authority to hire new employees and manage its own budget. The procurement of medicines for SSC, for example, is handled by the IESS.

The SSC was established as a pilot program in 1968 to provide primary health care services to four rural communities in the provinces of Guayas, Manabi, Chimborazo and Imbaburra. After five years, the government of Ecuador decided to implement the program nation-wide, and in 1981 a national SSC law was passed which established the entitlements and the financing of the system. The SSC currently provides health care services and other benefits to approximately 158,000 rural households (approximately 882,000 individuals) throughout Ecuador. The SSC therefore currently covers roughly 7.5 percent of Ecuador's total population and 17.5 percent of its rural population. Although SSC coverage continues to increase every year, it is still below the five-year goal of 1,000,000 individuals established in the 1981 law.

The SSC administers primary health care outpatient services through a network of 549 small health clinics (*dispensarios*) located primarily in remote rural areas. Over 90 percent of the clinics are located in the coastal and mountain (*sierra*) regions of the country, serving an average of 1,479 program participants or 288 households each¹. Most clinics are staffed by a full-time nurse auxiliary (40 hours per week) and a part-time doctor (who works 12 to 18 hours per week). The nurse auxiliaries are secondary school graduates who receive nine months of pre-service training sponsored by the SSC. Dentists are assigned to clinics on an interim basis (generally two months per year). The clinics tend to be sparsely equipped and the level of care very rudimentary. Services provided include medical and dental outpatient consultations, minor surgery, maternity, pre- and post-natal care, and dispensing of basic medicines. SSC doctors and nurse auxiliaries also perform outreach activities in the communities to raise community awareness of general health issues and to promote preventive health measures, such as improved sanitation practices. Patients that require hospitalization or care beyond the capabilities of the health clinics are referred to IESS hospitals located in urban centers.

The network of SSC clinics is supported by a central office in Quito which has a staff of 136, including about 40 professionals. The central office provides administrative and supervisory support, manages the procurement and distribution of medical supplies, and coordinates the in-service training of medical staff. There are also five regional offices staffed by medical professionals who provide supervisory support to the medical staffs of the health clinics; social workers, who help communities in establishing new clinics, and who promote community participation; and administrative and clerical staff.

¹ Source: Data from the SSC, 1993

Participation in SSC programs is voluntary. Beneficiaries pay only a nominal monthly dues for coverage for the entire family. The dues are supposed to cover all consultations, medicine and IESS hospitalization, if needed. By law, the monthly dues per household at the time of the survey were set at 660 sucres, which is one percent of the official monthly minimum wage at the time (the monthly contribution increased to 750 sucres (US\$0.33 at current exchange rates) in December 1994 upon an increase in the minimum wage). A recent study of SSC's financing by Zschock and Estupinan (1994) estimates that monthly dues from affiliated households contributed only about five percent of SSC's total allocated budget in 1993. Roughly half of SSC's costs are paid by urban workers and their employers through a payroll tax to IESS. The remainder of the system's funding comes from investment income and contributions from the government's general budget. Unlike the services of the Ministry of Public Health (MSP), SSC clinics are supposed to provide all consultations and medicines free of charge.

The SSC system is based on the principal of social solidarity and community involvement. SSC clinics are established in response to requests from the communities (following promotional visits from SSC regional-level social workers) through community organizations and cooperatives, such as large landholders (*hacendados*) and agro-industrial cooperatives. The SSC's decision to build a health center is based on a socio-economic assessment of the organization's proposal that examines the community's current access to health care, the main health care problems facing the community, the community's income level and other criteria. Proposed sites for health clinics must be accessible by road and should be able to serve a minimum of 1,500 individual members or 300 households². The requesting community organizations must donate the land and agree to maintain the clinic. Some communities also contribute material and/or labor for construction of the clinics. Enrollment in SSC programs and the collection of monthly fees are administered largely by the community organizations themselves. Individuals pay their monthly fees to the treasurer of their organization, who collects the fees for the entire organization and forwards them on to the SSC. SSC doctors and nurse auxiliaries hold regular monthly meetings with the subscribing organizations to discuss the health needs of the community and ways in which the SSC and the community can address them.

After 26 years of operation, however, several aspects of the SSC's approach to providing health care to the rural population are being challenged. At the forefront of the debate is SSC's dependency on government subsidies. Ecuador's current economic situation and the government's weak fiscal condition have fueled the debate over whether the government, and urban workers in particular, can or should continue to subsidize health care for the rural population. While this debate essentially concerns a policy issue, a better understanding of the ability and willingness of beneficiaries to pay a greater proportion of SSC's costs would help inform the range of policy alternatives that are available.

The effectiveness of the SSC health care delivery system is also being questioned. Preliminary information collected during the design phase of this study suggests that patient utilization rates and staff productivity are both low. The bulk of health services provided are curative in nature, as opposed to preventive, despite the great need for preventive health measures, such as immunizations and health education, among the rural population served by the SSC. The quality of care provided is also reportedly very uneven. There is also anecdotal evidence suggesting that many clinics lack needed equipment or do not have electricity or running water, and that chronic stockouts of medicine in the health clinics are common, resulting in patients being forced to purchase medicine themselves, sometimes from sources

² According to SSC officials in recent conversations, the ideal number of affiliate households in each clinic catchment area should be at least 500 (2,500 individuals).

located far from the community, and often at considerable expense. In addition, many clinics have been without doctors or nurse auxiliaries for long periods of time because of budget constraints, the difficulty in attracting qualified personnel to remote locations, and cumbersome hiring practices. The shortages of drugs and medical staff are undoubtedly two important reasons for the 50 percent decrease in the utilization rate of SSC clinics per member since 1980³. The rate of referrals to IESS facilities has also reportedly increased five-fold between 1980 and 1991 to one in every 20 consultations to a physician. Although referrals to IESS facilities are supposed to be limited to cases requiring inpatient services or specialty outpatient care, these referral statistics suggest that many cases that could be handled by the SSC clinics are being referred, at considerable cost to the system.

Despite these reportedly low utilization and other shortcomings with the SSC, anecdotal evidence suggests that the program receives considerable support from the rural population. There are a number of reasons for this strong support. First, the SSC provides basic health care coverage at a very low cost to its beneficiaries. Just as importantly, SSC facilities are the sole providers of health care in many remote locations. Without these facilities, residents in some areas would have to travel to distant towns to receive any health care at all. Consequently, many believe that the SSC provides health care to those that effectively would otherwise have no access to modern (i.e. non-traditional) health care.

Given the serious problems with the SSC system and the continued need for an effective health care delivery system for Ecuador's rural population, SSC officials are interested in reforming the SSC to greatly improve both its coverage to the rural population and its financial viability. The major goals of the SSC in undertaking these reforms are to:

- ▲ Extend coverage of the program to a larger proportion of the rural population, especially to those living in more remote areas;
- ▲ Increase the utilization of SSC health services among its members, including the utilization of childbirth and preventive health services;
- ▲ Improve and increase the delivery of preventive health services to SSC members and communities;
- ▲ Significantly reduce the rate of referrals to IESS facilities;
- ▲ Improve the financial sustainability of the program and decrease its financial dependence on the government by exploring funding options, including cost sharing by affiliate community organizations and increasing members' monthly contribution.

The SSC requested USAID/Quito to assist them in determining how best to meet these goals and objectives. This present study, conducted by the AID-funded Health Finance and Sustainability Project (HFS) and the Ecuadorean research firm, *Centro de Estudios y Datos* (CEDATOS), is aimed at providing information on the current SSC service delivery system, its costs, and the demand for health care amongst the rural population, that will help the SSC in developing policies to best meet these goals.

³ Data from the SSC, 1993.

1.2 PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of this study is to assist the SSC and USAID/Quito to identify the major constraints and problems with the SSC health service delivery system, and to determine how the current health services and financing mechanisms can be improved in order for the SSC to meet its goals of expanding coverage and utilization.

The objectives of the research are as follows:

1. Assess the SSC's effectiveness in meeting the health needs (both real and perceived) of its affiliates by examining the current provision of health services at the clinic level, the utilization of SSC services, the productivity of clinic staff, referral rates, other aspects related to service provision, and the perceptions of the population regarding SSC services and what improvements are needed.
2. Identify the factors which determine the demand for health care and the choice of provider among both the insured and uninsured populations.
3. Estimate the real costs of providing health care services at SSC facilities (both total and unit costs), compare costs across clinics, and analyze the major factors contributing to the cost differentials among clinics.
4. Determine the costs of increasing the utilization of SSC services⁴ by calculating the costs of improving the quality of the services currently offered to an acceptable standard.
5. Determine the willingness of the insured population to pay a higher share of the costs of the health care they receive.
6. Identify effective policy options to increase the utilization of SSC health facilities and to finance the expansion of SSC services to a larger segment of the rural population, particularly the poor.

1.3 ORGANIZATION OF THIS REPORT

The next section of this report discusses the methodology of the study, including the sampling method and description of the sample, the study design, and data collection instruments. The methodologies used for the demand analysis and for the cost study are presented separately in the sections of the report that discuss the results of those analyses (*Section 3.2 and 3.3*).

The findings of the study are presented in *Sections 3.0 to 5.0* following the order of the objectives outlined above. A general assessment of the SSC health services at the clinic level is presented in *Section 3.0*, including various aspects concerning the provision of services, enrollment and utilization rates, the

⁴ This would be achieved by both increasing utilization of SSC services among current members and expanding coverage to a greater segment of the rural population.

perceptions of the population and local SSC staff towards these services, and the population's willingness to pay for improved services. *Section 4.0* gives a summary of the demand analysis, including the factors that help determine the decision to seek health care outside of the home, the choice of provider, and the decision to join the SSC. A more complete report on the demand analysis, including a detailed description of the methodology and findings, has been prepared as a separate HFS report (see Knowles, 1995 draft). The findings of the cost analysis, including both current costs and projected costs of service expansion, are given in *Section 5.0*. Details on the costing methodology as well as the detailed figures on the costs for each of the clinics in the survey are presented in *Annex 3*.

Finally, the conclusions and recommendations from all facets of the study are presented in *Section 6.0*.

2.0 METHODOLOGY

2.1 DESIGN OF THE STUDY AND DATA COLLECTION INSTRUMENTS

Data collection for the study was conducted in three phases. The first phase involved the collection of information at the central and regional offices of the SSC. Through interviews and a review of background documents, the research team attempted to learn more about the overall structure of the SSC and its standard operating procedures, as well as to identify the scope and location of cost data and other information necessary for the study. Meetings at the central level with SSC senior management also were instrumental in selecting a subset of the survey sites among SSC's 548 clinics.

Phase II of the study involved the collection of data at the nine clinics that were selected for the survey (as described in *Section 2.3.2.1*). The research teams visited each clinic to collect quantitative information on the physical inputs (e.g. labor, equipment, supplies, and capital) used by the clinic as well as the outputs (e.g. consultations, community outreach activities) that the clinic produced in all of 1993. The primary sources of quantitative information were administrative and expense reports, order forms, records on hours spent kept by the staff, and visual inspection of the premises, equipment, and supply inventories. The teams also collected qualitative data on the general characteristics of each clinic and its surrounding population, the clinic's practices, the staff's perceptions of the health needs of the population, and the problems and constraints that the clinic faces. This information was collected through interviews with staff members, using a survey instrument/interview guide (shown in *Annex 1*).

The third phase of the data gathering involved the collection of information on households in the areas surrounding each clinic in the survey, including both households affiliated with the SSC and those that are not. This information was collected primarily through a formal survey of 1,017 households, and secondarily through small focus group discussions with community leaders in each of the nine survey sites.

The household survey instrument, shown in *Annex 2*, consists of five sections. The first section, *Datos de control*, and the last section, *Servicios Basicos y Actividad Economica*, contain questions concerning the demographic and socio-economic characteristics of the households, including number and age of household members, level of education, principal occupation, household income, religion, and ethnic group. The second section, *Datos de Salud*, consists of a series of questions on health problems experienced by household members in the two months preceding the survey. For each illness reported, respondents were asked to identify which household members was ill, the nature and duration of the illness, where care was sought, if any, the reason for selecting the chosen provider, and the out-of-pocket costs involved in seeking care and obtaining medicines. Respondents were also asked to report any visits for preventive health care (e.g. immunizations, family planning) in the last two months. The third section, for SSC member households only consisted of a series of questions concerning their perceptions of various aspects of SSC service provision, the availability of medicines at the SSC clinic during their last visit, where they seek health care apart from SSC facilities, reasons for visiting SSC clinics as well as other providers, and their willingness of pay a greater contribution for improved services. The fourth section, for non-member households, contained questions on where respondents seek care, their ratings on various aspects of their primary provider of choice, costs associated with seeking care, their interest

in joining the SSC, among other questions. The survey instrument was pre-tested and revised twice.

2.2 TRAINING OF THE DATA COLLECTORS AND FIELD WORK

Prior to the field work, CEDATOS conducted a training seminar for the data collectors and supervisors. The day-long seminar included a detailed review of the survey instruments, sampling procedures, interview techniques, supervision, and data validation. In the afternoon, seminar participants conducted a field test of the survey and met subsequently to discuss the results of the test and difficulties encountered. They also offered useful suggestions for improving the survey instruments, which were subsequently revised. In addition to the seminar, CEDATOS developed a field manual that outlined survey procedures and methods of supervision and data validation.

The data collection took place between July 27 and August 19, 1994. Four research teams, each composed of eight to twelve data collectors, a supervisor, and a coordinator, conducted the facility and household interviews. Most of the research staff had worked in similar rural areas on comparable research projects. Data collectors who spoke Quechua were sent to the survey sites where Quechua is widely spoken. Data collectors each conducted an average of five household interviews per day, lasting an average of 45 minutes each. Supervisors randomly verified that the data collectors had identified the pre-selected households correctly, and re-interviewed up to one-quarter of the households to ensure validity of the data.

2.3 SAMPLING

2.3.1 Sampling Methodology

2.3.1.1 The Selection of Survey Sites

Nine clinic sites were selected for the implementation of both the facilities and household surveys. The survey sites were chosen jointly by CEDATOS principal researchers, SSC senior management, and Abt Associates researchers. The nine survey areas were selected to allow for the examination of the SSC service delivery system under varying circumstances and environments. The nine survey sites cover all three of Ecuador's geographic zones (coast, sierra, oriente), include both sparsely and densely populated areas, and vary by the principal source of employment, ethnic group (indians, mestizos, blacks), religion (Catholic, Evangelical, indigenous), income level and language of its population. It is important to note that the selected sites are not necessarily representative of the rural population or the SSC system as a whole. The study therefore uses a case study approach to examining the SSC system and does not attempt to obtain a nation-wide representative sample of the rural population.

2.3.1.2

The Selection of Households

The researchers chose not to use a random sampling methodology to select households within each of the survey sites. In order to obtain sufficient numbers of both SSC-affiliated households and non-affiliated households, the study used instead a stratified sampling methodology. Efforts were made to obtain samples in each survey site having proportions of affiliated and non-affiliated households similar to the actual proportion in each area. To select SSC-affiliated households in each survey site, researchers used SSC enrollment lists as the sampling frame, and systematically chose names from these lists (e.g. every fourth or fifth names). Given the time constraints for the data collection and the dispersed nature of the population in many of the survey sites, the data collectors were instructed to attempt to interview heads of selected households at regular SSC monthly meetings or at meetings organized by the SSC physician specifically for this purpose. If selected household were not represented at the meetings, the data collectors were instructed to visit their homes to conduct the interview.

Non-affiliated households were selected using a cluster sampling method. As a sampling frame, the researchers used maps developed for the 1990 census by the National Statistics Institute (INEC) to identify the catchment area⁵ and the households in each survey site. Survey supervisors then physically reviewed each catchment area and revised the maps to add new dwellings not identified on the maps and to delete those that no longer existed. Each survey area was then divided according to the 1990 census segments, each having an average of 40 households, which were then subdivided into clusters of approximately eight dwellings each. Clusters of households were then randomly selected. The data collectors were instructed to survey all non-affiliated households in the selected clusters. If there were not enough non-affiliated households to obtain the desired number of households for that cluster, the data collectors selected the closest non-affiliated households they could find.

It should be noted again that the resulting sample of households is not a random sample within each survey site, nor are the survey sites necessarily representative of the areas served by the SSC system as a whole. The fact that the sample is not representative should be kept in mind when interpreting the results of the study in *Sections 3.0 to 5.0*.

2.3.2 Description of the Sample

2.3.2.1

Survey Sites

The nine selected clinic survey sites are shown on the map in *Graph 2-1* and in *Exhibit 2-1*. The selected sites represent the three major regions of the country -- mountains (*sierra*), coast and the Amazon (*oriente*). The sites also represent the various ethnic and cultural groups present in Ecuador, and vary by their accessibility to urban areas (and to other health providers), the educational and income levels of the population, the principal source of employment, and other characteristics.

Four of the nine sites are in the sierra region. Llactahurco and San Antonio de Alao, located in the central part of the country, have predominantly Indian populations that are largely bilingual in Spanish and Quechua. Both areas are high in the mountains (at an altitude of 3,200 meters or more), are fairly

⁵ That is, the area targeted by the SSC to be served by the clinic.

Graph 2-1: Location of SSC Clinic Survey Sites in Ecuador, SSC Survey, 1995



Exhibit 2–1: Characteristics of Selected Sample Sites

Clinic Name	Province	Nearest City/Town	Main Ethnic Group(s)	Dominant Language
Mountain Region				
Llactahurco	Cotapaxi	San Miguel	Indian	Spanish/Quechua
San Antonio de Alao	Chimborazo	Riobama	Indian	Spanish/Quechua
Uzhar	Azuay	Gualaceo	Mestizo	Spanish
Tumbunuma	Loja	Loja	Mestizo	Spanish
Coastal Region				
El Quingue	Esmeraldas	Muisne	Black/Mulatto	Spanish
El Aji	Manabi	Pajan	Mestizo	Spanish
San Vicente 3	Manabi	Pajan	Mestizo	Spanish
San Pablo 3	Guayas	Santa Elena	Mestizo	Spanish
Amazon Region				
Campanacocha	Napo	Tena	Indian	Quechua

Exhibit 2–2: Size of Household Survey Sample

Clinic Area	Province	Total No. of Households in Area	No. of Households in Sample	Sample as Proportion of Total No. of Households
Llactahurco	Cotopaxi	435	121	27.8%
San Antonio de Alao	Chimborazo	433	133	30.7%
Uzhar	Azuay	706	140	19.8%
Tumbunuma	Loja	457	92	20.1%
El Quingue	Esmeraldas	250	80	32.0%
El Aji	Manabi	891	131	14.7%
San Vicente 3	Manabi	674	130	19.3%
San Pablo 3	Guayas	1,009	126	12.5%
Campanacocha	Napo	190	64	33.7%
Total		5,045	1,017	20.2%

remote with poor roads, and thus have limited access to health facilities apart from the SSC clinics. The use of traditional healers and midwives is quite common in these areas. Further south and at somewhat lower elevations are the survey sites of Uzhar and Tumbunuma, the latter close to the Peruvian border. Both of these areas have a largely mestizo, Spanish-speaking population. The residents of the Tumbunuma clinic area are mainly farmers, half of whom earn less than the minimum living wage, whereas less than half of those in the Uzhar survey site are in agriculture, the remainder employed in trades and as migrant laborers and unskilled workers in larger towns and cities. Traditional healers and midwives are also commonly used in these areas, particularly in Uzhar, where residents will reportedly seek traditional practitioners before consulting with physicians, especially for "mountain illnesses" such as *soroche*, which is believed to be caused by the presence of metals in the Andes.

Another four survey sites are in the coastal region of the country. The El Quingue site along the northern coast in Esmeraldas province, is the only survey site with a predominantly black and mulatto population. Only around one-half of the population is engaged in agriculture, with the remainder employed as fishermen, laborers, and craftsmen. This area is accessible by a coastal road to larger towns, such as Muisne and Esmeraldas. Further south in the province of Manabi are the survey sites of El Aji and San Vicente. Most of the population in these areas are mestizos engaged in agriculture (around three-quarters of the population). San Pablo in the heavily populated Guayas province is the wealthiest area represented in the survey, with only around five percent of households earning less than the minimum wage. Most of its residents are employed as fishermen and tradesmen, with only around eight percent engaged in agriculture. A series of secondary roads links the clinic area with the main coastal highway, making it the most accessible survey site to major towns and thus to other health providers. The population of this area also tends to be better educated than in other parts of the country, and to prefer Western medicine over traditional practices.

The final clinic site, Campanacocha, is in the Amazon region in the province of Napo, a remote area along the Napo River that is mainly accessible by boat. The population consists largely of Quechua-speaking Indians who are predominantly engaged in agriculture, including subsistence farming and the growing of cash crops, such as coffee and cocoa. Most residents have no access to electricity nor to proper sanitation. The SSC clinic is the main health care provider for many of the communities that it serves, most of which are one hour or more away by boat. The use of traditional healers and midwives is also reportedly quite common.

2.3.2.2 The Household Sample

In all, 1,017 households were surveyed in the nine study areas. As shown in *Exhibit 2-2*, the number of households in the survey ranges from 64 in the remote area of Campanacocha to 140 in Uzhar, with six of the nine sites having more than 120 households each. Between 13 and 34 percent of households in the survey sites were surveyed, and the overall sample represents 20 percent of all households in the target areas.

Exhibit 2-3 shows the breakdown of households in the population and in the sample by their affiliation with the SSC. As mentioned above, efforts were made to obtain samples that had similar proportions of affiliated and non-affiliated households as in the population as a whole in each area. Overall, 62 percent of the households in the sample are SSC members, which is very close to the enrollment rate of 60 percent of the entire population in the survey areas combined. Although enrolled

Exhibit 2-3: Breakdown of Households in Area and in Survey Sample by SSC Enrollment Status													
Clinic Area	Province	Area Households						Sample Households					
		Enrolled		Not Enrolled*		Total		Enrolled		Not Enrolled*		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	Cotopaxi	228	52%	207	48%	435	100%	90	74%	31	26%	121	100%
San Antonio de Alao	Chimborazo	243	56%	190	44%	433	100%	90	68%	43	32%	133	100%
Uzhar	Azuay	306	43%	400	57%	706	100%	64	46%	76	54%	140	100%
Tumbunuma	Loja	371	81%	86	19%	457	100%	77	84%	15	16%	92	100%
El Quingue	Esmeraldas	188	75%	62	25%	250	100%	39	49%	41	51%	80	100%
El Aji	Manabi	431	48%	460	52%	891	100%	61	47%	70	53%	131	100%
San Vicente 3	Manabi	344	51%	330	49%	674	100%	60	46%	70	54%	130	100%
San Pablo 3	Guayas	762	76%	247	24%	1,009	100%	93	74%	33	26%	126	100%
Campanacocha	Napo	140	74%	50	26%	190	100%	60	94%	4	6%	64	100%
Total		3,013	60%	2,032	40%	5,045	100%	634	62%	383	38%	1,017	100%

* Includes both households that were formerly affiliated with the SSC and those that have never joined.

Exhibit 2-4: Socio-Economic Characteristics of Household Sample								
Clinic Site	Province	Main Ethnic Group	Sample Size No. of Households	Proportion (%) of Households in Agriculture (a)	Proportion (%) of Households Earn-ing below Minimum Living Wage (b)	Proportion (%) of Household Heads Completing Primary School	Proportion (%) of Households with Electricity	Proportion (%) of Households with Private Latrines
MOUNTAIN REGION								
Llactahurco	Cotopaxi	Indian	121	93	53	31	90	79
San Antonio de Alao	Chimborazo	Indian	133	99	22	20	93	33
Uzhar	Azuay	Mestizo	140	46 (c)	19	44	82	50
Tumbunuma	Loja	Mestizo	92	95	53	62	68	15
COASTAL REGION								
El Quingue	Esmeraldas	Black/Mulatto	80	54	12.5	50	94	51
El Aji	Manabi	Mestizo	131	81	14	44	69	4
San Vicente 3	Manabi	Mestizo	130	73	2	52	47	5
San Pablo 3	Guayas	Mestizo	126	8 (d)	5	67	99	48
AMAZON REGION								
Campanacocha	Napo	Indian	64	97	60	84	6	50

(a) Includes those whose principal occupation is farming, livestock raising.

(b) The minimum living wage for 1993 is defined as 66,000 sucres per month. The percentages are in terms of only those responding to the question. (The non-response rate was 6% overall, and 10% to 22% in three survey sites).

(c) 17% are listed as craft-makers.

(d) 48% are self-employed or in commerce.

households are over- or under-represented in some survey sites, there were sufficient numbers of both affiliated and non-affiliated households in the sample in each of the survey areas, with the exception of Campanacocha (which has only four non-affiliated households in the sample) to be able to compare these groups by their demand for health care, utilization patterns, and other variables.

Some major socio-economic characteristics of the household survey sample in each study site are shown in *Exhibit 2-4*, and match fairly closely with those of the general population in each area. As seen in the exhibit, the proportion of sample households earning less than the minimum wage ranges from more than half in the poorer survey sites, such as Campanacocha, Llactahurco, and Tumbunuma, to five percent or less in the coastal areas of San Vicente and San Pablo. The proportion of household heads having completed primary school also varies considerably by area, from only 20 percent in San Antonio de Alao in the Andes to at least half in three of the four coastal sites and in the survey site of Campanacocha in the Amazon. In several of the areas, including several mountain sites, nearly all households have electricity, whereas less than one-half of those sample households in San Vicente and only six percent of those in Campanacocha have electricity. Although most of the population in all survey sites had access to communal latrines, which are often unsanitary, the proportion of households in the sample having private latrines ranges from nearly 80 percent in the Llactahurco sample, to around half of those in Uzhar, El Quingue, San Pablo, and Campanacocha, to five percent or less in El Aji and San Vicente.

3.0 FINDINGS CONCERNING THE DELIVERY, UTILIZATION, AND PERCEPTIONS OF HEALTH SERVICES IN THE SURVEY AREAS

In this section, we will discuss the survey's findings concerning the health needs of the population, what services are currently being offered at the SSC clinics in the survey areas, the utilization of SSC health services, and perceptions of these services both from the clients' and staffs' points of view. We also examine factors affecting the utilization of SSC services, as well as the populations' beliefs on how the SSC services can be improved and their willingness to pay for these improvements. The availability, use, and perceptions of non-SSC services in the survey areas are also discussed in comparison with SSC services. The information presented in this section will help the SSC to determine which quality improvements and other steps must be taken in order for the organization to reach its goals of increasing utilization of its services and expanding its coverage to a larger segment of the rural population. Information from the section comes from the household survey, as well as from interviews with SSC medical staff in each facility, time and activity records of medical staff kept by the central SSC office, and focus group discussions with members of the communities and local leaders.

As discussed in *Section 2.0*, the survey areas were selected to reflect the broad range of geographic and ethnic characteristics present in Ecuador, and thus are not necessarily representative of either the SSC system or the country as a whole. For this reason, we present most of the data in this section by each clinic site. Although several of the tables do show averages and totals for the entire sample, these should be interpreted with great caution, since the sample is not representative. However, since a probabilistic sample of households was selected within each survey area and within each stratum of SSC and non-SSC members, it is assumed that the selected households are fairly representative of all of the families within each of these groups.

3.1 HEALTH NEEDS OF THE POPULATION IN THE SURVEY AREAS

The household survey collected data on self-reported illnesses of all household members during the two months preceding the survey. The 1,017 households included in the study reported a total of 1,284 illnesses during that time period. As shown in *Exhibit 3-1*, respiratory diseases, which include pneumonia, bronchitis, asthma, and other acute respiratory infections, were the most common illnesses reported in seven of the nine survey areas, accounting for between 19 and 37 percent (and 31 percent overall) of all reported illnesses. Infections and parasitic diseases, which include diarrhea, malaria, intestinal worms, tuberculosis, typhoid fever, among others were also commonly reported, especially in the malarious areas along the coast, such as El Aji and San Vicente, where they accounted for 48 percent and 37 percent, respectively, of illnesses reported in the preceding two months. Tuberculosis is reportedly extremely prevalent among adults in Campanacocha. Digestive disorders, which include gastritis, ulcers, appendicitis, accounted for another seven to 19 percent (14.5% overall) of reported illnesses. In all, the three categories of infections/parasites, respiratory illnesses, and digestive disorders make up between 54 and 83 percent (65% overall) of reported illnesses in the household survey.

These figures should be interpreted with caution, however, since the illnesses were self-reported and thus self-diagnosed in cases where no health care was sought, since the numbers of reported illnesses are relatively small, and since recall data, especially over a two-month period, are not always considered

Exhibit 3-1: The Most Common Illnesses Reported by Household Members during the Two Months Preceding the Survey: Percent of all Reported Illnesses.

Clinic	N	Respiratory Illnesses (e.g. pneumonia, asthma, bronchitis, etc.)	Infections/Parasites (diarrhea, TB, malaria, worms, etc.)	Digestive Disorders (e.g. ulcers, appen- gastritis, etc.)	Malnutrition, Vitamin Deficien- cies, diabetes, etc.	Anemia	Other	Total
Llactahurco	155	35.5	10.3	16.8	7.1	4.5	25.8	100.0
San Antonio de Alao	160	36.9	13.7	17.5	5.0	3.7	23.2	100.0
Uzhar	208	35.6	14.4	15.4	9.6	1.9	23.1	100.0
Tumbunuma	144	36.8	11.1	16.0	4.2	9.0	22.9	100.0
El Quingue	183	26.2	21.3	7.1	6.0	9.8	29.6	100.0
El Aji	100	24.0	48.0	11.0	4.0	1.0	12.0	100.0
San Vicente 3	73	19.2	37.0	19.2	4.1	1.4	19.1	100.0
San Pablo 3	123	33.3	24.4	12.2	2.4	4.9	22.8	100.0
Campanacocha	138	23.2	17.4	17.4	4.4	11.6	26.0	100.0
TOTAL	1,284	30.9	19.6	14.5	5.6	5.6	23.8	100.0

very reliable. Nonetheless, these data do reflect for the most part the government's statistics on the major causes of morbidity and mortality, which show that infectious diseases, resulting largely from poor sanitary and socio-economic conditions, continue to predominate in much of Ecuador. The household survey recall data, as well as interviews with SSC staff and focus group discussions also identify malnutrition and anemia as significant problems in six of the nine survey areas. These nutritional deficiencies often are underlying causes of mortality from childhood diarrhea and other common childhood infections.

3.2 THE PROVISION OF HEALTH CARE IN THE AREAS SURVEYED

3.2.1 SSC Primary Health Care Services

3.2.1.1 Clinic Facilities and Equipment

As shown in *Exhibit 3-2*, seven of the nine clinics surveyed operate out of permanent structures, most of them built within the last few years with assistance from the communities themselves. Two clinics were still housed in make-shift facilities at the time of the survey; the San Pablo 3 clinic in Guayas province, which operates out of the second floor of a house owned by a SSC member, and the clinic in Campanacocha, which uses a wooden structure donated by the community. Full-time electric power is available in seven of the nine clinics surveyed; the San Vicente and Campanacocha clinics have no access to electricity. As shown in the Exhibit, only four of the nine clinics have safe piped-in water supplies. The others must depend on wells, river water, rain water (in the case of Campanacocha), underground tanks, or bottled water delivered by truck.

Much of the equipment used in the clinics is eight to ten years old and often in need of repair. Most of the clinics did not have working refrigerators, and thus are not able to store vaccines in order to provide immunizations on a routine basis. Other critical medical equipment, such as sterilizers, diagnostic equipment, and gynecological equipment were also found lacking or in poor condition in most of the clinics surveyed. Maintenance of existing equipment appeared to be inadequate or non-existent in the majority of the clinics. However, the physicians in Uzhar and Campanacocha reported that the equipment in their clinics was sufficient and in good condition.

3.2.1.2 Access of the Population to the SSC Clinics

Access of the communities served by the SSC to the clinics varies considerably by area, as shown in *Exhibit 3-3*. While some of the clinics, such as Lactahurco, mainly serve nearby communities, others, including Campanacocha, San Pablo, and El Quingue serve a more scattered population, with some communities as far as 30 kilometers away.

Exhibit 3-3 also shows the estimated time that it takes for SSC members who took part in the household survey to travel to the SSC clinic. Despite the often great distances -- up to 30 kilometers -- from the member communities to the clinics, the clinics in the coastal areas of San Vicente and San Pablo are relatively accessible to these communities, because of good transportation services in these areas.

Exhibit 3-2
Data on Infrastructure, Staff, and Hours of SSC Clinics Included in the Survey, 1993

Clinic Name	Infrastructure			Availability of Staff in Clinics*				
	Year Structure Built	Water Supply Source	Electricity?	Doctor		Nurse Auxiliary		Dentist
				Days/Week	Hours/Week	Days/Week	Hours/Week	
Llactahurco	1980	pipd in	yes	3	14	5	40	2 months/ year (30 hrs/wk)
San Antonio de Alao	1992	pipd in	yes	2	11	5	40	2 months/ year
Uzhar	1993	pipd in	yes	3	15	5	40	none
Tumbunuma	1994	pipd in	yes	2	8	5	40	2 months /year
El Quingue	1994	underground tank	yes	2	8	5	40	none
El Aji	1992	well/river	yes	2	8	5	40	2 months /year
San Vincente 3	1989	river	no	3	18	5	35	2 months /year
San Pablo 3	makeshift facility (someone's home)	bottled water brought in by truck	yes	4	24	5	40	6 months/ year
Campanacocha	makeshift wooden structure	rain water/river	no	3	12	5	40	2 months/ year (25 hrs/wk)

* Information on staff working in the clinic in 1993.

Exhibit 3-3: Accessibility of SSC Clinics and Other Health Facilities to Member Households

Clinic	Communities Served:		No. of Respondants	Time from Home to SSC Clinics (% of Respondants)*:				Main Means of Transportation to Clinic	Other Health Services in Area
	Name	Distance from SSC Clinic (km.)**		30 min. or less	31-60 min.	More than 1 Hour & Less Than 2	More than 2 hours		
Llactahurco	Llactahurco San Jose de Rubios	0 4	89	78%	16%	7%	0%	On foot	MSP Subcenter SSC clinics in Casubamba, Pujuli, Salcedo & San Miguel
San Antonio de Alao	San Antonio de Alao Llactapamba Shullidies Pelteteg Puninhuayco	0 4 8 10 12	90	77	12	11	0	On foot	MSP Subcenters in Licto & Pungala
Uzhar	Uzhar Shishio San Miguel Mayuntur Llintin San Juan Nallyg Cochapamba	2 9 4 10 8 5 8 11	64	98	0	0	2	On foot	MSP Subcenter in San Juan
Tumbunuma	Tumbunuma Lubusco Santa Ana Nueva Fatima Panecillo Puritaca Papayal	0 4 7 2 8 11 16	76	66	20	13	1	On foot	MSP Subcenters in Nueva Fatima, Loja & Sozaranga
El Quingue	El Quingue Caimito Estero De Platano Galera Galerita	0 5 10 20 30	39	95	3	0	3	On foot	MSP Subcenters in Galera, Estero de Plantano & Tonchigue

Exhibit 3-3: Accessibility of SSC Clinics and Other Health Facilities to Member Households

Clinic	Communities Served:		Time from Home to SSC Clinics (% of Respondants)*:					Main Means of Transportation to Clinic	Other Health Services in Area
	Name	Distance from SSC Clinic (km.)**	No. of Respondants	30 min. or less	31-60 min.	More than 1 Hour & Less Than 2	More than 2 hours		
El Aji	Las Aguitas	1	61	23	29.5	21	26	On foot/ by horse or donkey	MSP Subcenters in Camposano, Cascol; MSP Health Center in Pajan
	La Nueva Esperanza	3							
	Los Dos Rios	2							
	Agua Fria	4							
	Las Cruces	11							
	Las Mesadas	10							
	Rio Chico	13							
	Narangito-La Esperanza	16							
San Vicente 3	San Vicente	0	60	53	22	7	18	Car/truck	MSP Subcenter in Pedro Pablo Gomez; MSP Health Center in Pajan
	Bajo Grande	10							
	San Jacinto	6							
	Agualan	12							
San Pablo 3	San Pablo	0	93	49	36	13	2	Car/truck	MSP Subcenter, General Hospital & Polyclinic in Sta. Elena (18 km.)
	El Morrillo	12							
	Cerro Alto	8							
	San Vicente	30							
	Prosperidad	30							
Campanacocha	Campanacocha	(In Time)	58	31	31	31	7	Canoe/motor boat	MSP Subcenter in Misahualli Hospital in Tena
	Santa Rosa	0							
	Puka Chicta	30 minutes							
	Balsa Chicta	1 1/2 hrs.							
	Balsa Chicta	1 hour							
	Campo Cocha	1 hour							
	Bellevista Alta	1 hour							
	Bellevista Baja	1 1/4 hrs.							
	Palmeras	2 hours							
	Sumino	2 hr. 40 min.							

* Question asked of SSC members only. Numbers do not always add up to 100% due to rounding.

** Unless otherwise indicated.

Seventy-five to eighty-five percent of respondents from these clinic sites said that the trip to the clinic takes an hour or less, with most traveling by car, bus or hired truck. By contrast, although no member community served by the El Aji clinic is further than 16 kilometers from the clinic, nearly half (47%) of respondents from this area require more than an hour to travel to the clinic, with 26 percent requiring more than two hours, since they mainly travel by foot, horse or donkey. Travel to the Campanacocha clinic is also difficult, since most of its clients must travel by canoe or motor boat to reach it. The trip takes from 1 1/4 hours to nearly three hours for residents of four of the nine communities that it serves, and can cost from 5,000 to 20,000 sucres. The fact that 62 percent of respondents in Campanacocha say that their travel time is one hour or less indicates that the majority of patients coming to the clinic are from the communities closest to the clinic, and that relatively few residents of the far off communities are using the clinic. This is also likely to be the case in the mountainous areas served by the Uzhar and Tumbunuma clinics, where 98 and 66 percent of respondents, respectively, take 30 minutes or less to reach the clinic, despite the fact that several of the communities served by these clinics are a considerable distance away (eight or more kilometers) and that most clients travel on foot. Another possible explanation for the relatively short travel times reported by the respondents is that residents of communities nearest the clinics are over-represented in the study. Unless this is the case, however, these results seem to indicate that most of the population served by the SSC will not travel very far -- e.g. more than one hour -- to seek health services at SSC clinics, at least at the level of quality that they are currently being offered.

3.2.1.3

Clinical Staff and Work Hours

Most of the clinics in the survey reported having clinic hours from 8:00 a.m. to 12:00 p.m. and from 2:00 to 6:00 in the afternoon. All clinics surveyed are staffed by a part-time physician and full-time nurse auxiliary. All of the physicians working at the nine clinics in 1993, with the exception of the San Pablo clinic, were assigned to two SSC clinics, typically on alternate days. As shown in *Exhibit 3-2*, they work at each clinic two to three days per week for between four and six hours per day. They therefore put in between eight and 18 hours in each clinic per week. The San Pablo physician present in 1993, however, worked four days a week in the clinic for a total of 24 hours per week⁶. Each nurse auxiliary works 35 to 40 hours per week, although, as shown below, a part of each week is spent doing outreach work in the communities.

Anecdotal evidence suggests that the availability of medical services at the clinics is often less than these official hours would indicate. Several of the physicians surveyed, especially those in the remote mountain areas, reported having difficulty reaching the clinics during bad weather. They would often include their travel time as part of their work day, thus reducing the amount of time they offered clinical services. Some reported not being able to reach the clinic for days at a time due to inclement weather and poor travel conditions. This is reportedly less of a problem with the nurse auxiliaries, who often live close to the clinic, and in some cases, in the clinic itself.

The time spent performing outreach work in the communities also is likely to reduce the number of hours during which medical services are available at the clinics. This is especially true of the nurse

⁶ Although the physician that replaced her in 1994 was working only two days per week at the clinic at the time of the survey, this new physician had just received a request from the central SSC office to work full-time at the San Pablo clinic.

auxiliaries, who, according to data from 1993, spent between 2.5 and 10 hours per week in the communities served by the clinics. Community outreach work includes home visits, health education activities, and community organizing/development work. The nurse auxiliaries in Llactahurco and San Vicente worked 10 hours or more per week in the communities in 1993, while those in the other seven clinics in the survey worked on average between two and eight hours per week on outreach activities. It is likely that, in some cases at least, these community activities reduce the hours during which the clinics are open, although some clinics in the survey tried to avoid this problem by having the nurse auxiliary perform community work only when the physician was present in the clinic (or vice versa). Physicians in most of the clinics surveyed reported performing between one and two hours per week of outreach work, as discussed below, although the physician in San Vicente averaged more than four hours per week in 1993.

Dental services are also available in SSC clinics on an intermittent basis (*Exhibit 3-2*). SSC dentists usually rotate between a number of clinics; in Llactahurco, for instance, the dentist is assigned to 12 clinics, and spends around one month per year in each one. In the clinics in Tumbunuma, El Aji, San Vicente, and Campanacocha, the dentists work two consecutive months per year for 25 to 30 hours per week. The most available dental services are provided in the San Pablo clinic in Guayas, where the dentist works full-time for six consecutive months (January to June) of the year. There were no dental services available in the Uzhar and El Quingue clinics in 1993 and 1994. Because of the short amount of time per year each dentist is available per clinic, they spend most of their time in the clinics and rarely make home or community visits. The exception is in San Pablo, where the dentist spent an average of seven hours per week during his six months in the area conducting home visits, health education, and other community outreach work.

3.2.1.4

Availability of Clinical Staff during the Year 1993

As mentioned in *Section 1.1*, SSC clinics have often been without physicians for long periods of time, due to budget constraints, cumbersome hiring procedures, and the difficulty of attracting physicians to remote rural areas. This has certainly been a problem at several of the clinics involved in this survey, as shown in *Exhibit 3-4*. During the year 1993, only four of the nine clinics had a physician present throughout the year. At four other clinics -- those in Tumbunuma, El Quingue, El Aji, and Campanacocha, there was a physician for only five or six months of the year. The SSC presumably has less difficulty attracting and retaining nurse auxiliaries at the clinics; six of the nine clinics had a nurse auxiliary throughout the year, whereas two (Tumbunuma and El Aji) had no nurse auxiliary for three months of the year, and one (San Vicente) had no auxiliary for one month. According to the 1993 data, there was neither a physician or nurse auxiliary employed in the Tumbunuma clinic during two months (January and March), and in the El Aji clinic for three months (January to March), during which time these clinics were presumably closed. All of the clinics in the survey, however, had both physicians and nurse auxiliaries by the end of 1993.

Exhibit 3-4 Availability of Physicians in 1993 at the Nine Clinics Surveyed		
Clinic	Months During Which a Physician was Present	Number of Months the Clinics had a Physician
Llactahurco	April-December	9
San Antonio de Alao	January-December	12
Uzhar	January-December	12
Tumbunuma	February, April, October-December	5
El Quíngue	August-December	5
El Aji	July-December	6
San Vicente 3	January-December	12
San Pablo 3	January-December	12
Campanacocha	July-December	6
Source: Employment Data from SSC central office files		

3.2.1.5

The Provision of Health Services by SSC Clinics

Curative vs. Preventive Care

The majority of medical care dispensed at the SSC clinics is for the treatment of illnesses. Records kept by clinical staff, presented in *Exhibit 3-5*, show that between 70 percent and 95 percent of all visits made to the doctor in 1993, and 86 percent to 98 percent of those to the nurse auxiliary were curative care visits for the treatment of acute illnesses and injuries. In all, 88 percent of all clinic visits to the physician or nurse auxiliary in 1993 in the nine clinics were for curative care. Visits to the doctor for preventive care, which includes pre- and post-natal care, family planning, well-baby care, and physical examinations were highest in San Antonio de Alao, Campanacocha, San Pablo and Llactahurco, where they made up between 21 and 30 percent of the physicians' clinical care visits in 1993. Preventive care visits accounted for only between five and 14 percent of all visits to physicians in the remaining five clinics surveyed.

Only between two and 14 percent of all visits to the nurse auxiliaries were for preventive care, which include immunizations, as well as the other types of care mentioned above. Due to chronic stock-outs of vaccines and a lack of refrigerators, which are required for the storage of vaccines, few vaccinations are actually provided on a regular basis in the clinics. The clinics in Campanacocha, San Antonio de Alao, and Uzhar recorded no vaccinations given for the entire year 1993, and the clinic that recorded the most -- San Pablo -- only provided a total of 96 doses for the year. However, some of the clinics, including the El Quingue clinic, took part in the government's mass immunization campaigns last year, which may account for the higher number of immunization visits shown in *Exhibit 3-18* than would be indicated by the clinic records on doses dispensed.

As shown in *Exhibit 3-6*, few family planning services are provided at most of the clinics, either because of low supplies of contraceptives or low demand or both. Family planning visits recorded by clinic staff averaged less than one per week in most of the clinics in the survey, and only one visit was made in Campanacocha for the entire year. The main exception is the San Pablo clinic, where a more educated population of women made a total of 258 visits (around five per week) for family planning services in 1993. This is also the busiest of the nine clinics, where a total of 8,035 visits to the physician and nurse auxiliary were made during 1993 and where the physician worked more days per week (four) than at any of the other clinics in the survey. The clinic also recorded 85 new family planning acceptors for the year. The clinic staff in San Pablo claim that clients regularly use condoms, which are dispensed by the clinic.

Few births are delivered at the clinics, due to their limited hours and lack of overnight services, the limited facilities for childbirth (most only have a cot or two for women in delivery), and the preference in some areas, especially among the Indian population, for traditional birth attendants. Most clinics recorded no deliveries in 1993, and only a total of 14 births were delivered at all nine clinics during the entire year.

Community Outreach Work

The physicians and nurse auxiliaries in all of the clinics surveyed conduct outreach activities in the SSC member communities themselves. Outreach activities include home visits to follow up on curative

Exhibit 3-5: Breakdown of Medical Care Visits to SSC Clinics Surveyed, 1993

Clinic	VISITS TO THE PHYSICIAN:				VISITS TO NURSE AUXILIARIES:			
	N	Curative*	Preventive**	Total	N	Curative*	Preventive**	Total
Llactahurco	680	70%	30%	100%	1,409	95%	5%	100%
San Antonio de Alao	577	79%	21%	100%	1,229	86%	14%	100%
Uzhar	803	89%	11%	100%	1,438	94%	6%	100%
Tumbunuma	360	89%	11%	100%	1,538	96%	4%	100%
El Quingue	443	86%	14%	100%	3,206	91%	9%	100%
El Aji	1,155	90%	10%	100%	1,569	97%	3%	100%
San Vicente 3	1,399	95%	5%	100%	580	87%	13%	100%
San Pablo 3	3,186	71%	29%	100%	4,849	90%	10%	100%
Campanacocha	643	73%	27%	100%	1,798	98%	2%	100%
TOTAL	9,246	80%	20%	100%	17,616	92%	8%	100%

* Includes deliveries (3 by the physicians and 11 by the nurses).

** Includes prenatal, perinatal, family planning, immunizations (for nurses only), well-baby, and other preventive care activities.

Source: Data from the SSC central office.

Exhibit 3–6: Number of Reproductive Health Visits Made in 1993 to the SSC Sample Clinics*

Clinic	Pre–Natal Care	Post–Natal Care	Family Planning**
Llactahurco	83	11	28
San Antonio de Alao	55	21	69
Uzhar	68	32	9
Tumbunuma	27	6	4
El Quingue	34	2	44
El Aji	26	6	26
San Vicente 3	26	5	63
San Pablo 3	230	59	258
Campanacocha	47	19	1

* Includes visits to both physicians and nurse auxiliaries.

** Includes both new and return visits.

Source: Data from the central SSC office.

care patients and to provide health education and guidance to residents in the areas of water supply, sanitation, waste disposal, and housing. Community-based activities also include group health education and promotional talks and presentations, training of village volunteers in first aid and in community organizing, and guidance in community development activities, such as those designed to improve the environmental conditions of the community. The physician in Lactahurco, for example, reportedly invites Indians to the community centers to show films and slides on prenatal care, childbirth, family planning, sexually transmitted diseases, and other topics in order to promote preventive care services.

Exhibits 3-7 and 3-8 show the breakdown of the physicians' and nurse auxiliaries' recorded time for all of 1993 by type of activity. The amount of time spent on community-based activities varies considerably from clinic to clinic. The nurse auxiliaries in Lactahurco, Tumbunuma, and San Vicente reportedly devoted between 27 and 30 percent of their time to outreach work (eight to ten hours per week), which is 49 percent to 69 percent of all the time they have recorded for the provision of health services to patients. Nurse auxiliaries in the other clinics spent six to 14 percent of their recorded time to outreach activities, averaging between 2.4 and 5.5 hours per week. Although most physicians in the clinics surveyed spent on average only one or two hours per week in the communities, with the exception of the San Vicente doctor, who spent at least four hours every week, this time still represents between six and thirty percent of their total time, and a larger portion of the total time they spent directly with patients.

These data show that, at least in the nine clinics included in the survey, the medical staff do take seriously their mandate to bring health services directly to the communities on a regular basis. However, caution must again be taken in interpreting these data, since they are recorded by the clinic staff themselves and no independent observations of staff time and activities were possible. It is also not possible to determine from the data which communities the clinical staff were visiting. Were they, for instance, visiting all of their target communities regularly? Were they, on the other hand, concentrating mainly on those communities furthest from the clinic and thus the least likely to visit the clinics, or alternatively, were they visiting mainly those communities closest to the clinics and thus easiest to reach? This information would be required to determine the adequacy of the outreach activities currently provided by SSC clinics.

Referrals

The SSC clinics' staff refer out to IESS hospitals patients who can not be treated properly at the SSC clinics⁷. These include patients requiring in-patient care or more complicated out-patient procedures, such as treatment for pregnancy complications, treatment for dehydration from acute diarrhea, tubal ligations, and medical procedures requiring specialists. The SSC has been concerned with the growing rate of patient referrals to IESS facilities, due to the significant costs that these referrals add to the system. According to SSC data gathered during the design phase of this study, between 1980 and 1991, the number of referrals increased from one in every 110 physician consultations to one in every 18 (5.5%), a more than five-fold increase in 11 years.

In the survey, information on referrals by SSC clinics come from two sources of data: 1) the two-month recall data on illnesses among SSC member households, which included a question on whether those with illnesses who sought care at SSC clinics were referred out, and 2) clinical records of physician

⁷ These services are provided free of charge to SSC patients.

Exhibit 3-7: Breakdown of Physicians' Recorded Time (in Hours) by Type of Activity at Surveyed Clinics, 1993

Clinic	TIME IN HOURS											
	Clinical Care (a)		Outreach (b)		Administration		In Service Training		Time Not Accounted for (c)		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	194	37%	56	11%	43	8%	40	8%	190	36%	523	100%
San Antonio de Alao	136	28%	32	7%	34	7%	10	2%	280	57%	492	100%
Uzhar	213	30%	84	12%	204	29%	23	3%	187	26%	711	100%
Tumbunuma	93	23%	119	30%	59	15%	18	4%	113	28%	402	100%
El Quingue	122	48%	54	21%	46	18%	16	6%	17	7%	255	100%
El Aji	306	41%	123	16%	21	3%	12	2%	284	38%	746	100%
San Vicente 3	309	37%	215	26%	50	6%	21	3%	237	28%	832	100%
San Pablo 3	860	77%	117	10%	98	9%	22	2%	23	2%	1,120	100%
Campanacocha	158	35%	28	6%	11	2%	2	0%	247	55%	446	100%
ALL CLINICS	2,391	43%	828	15%	566	10%	164	3%	1,578	29%	5,527	100%

(a) Includes curative care, preventive care, and deliveries (only 3 hours recorded for deliveries in all).

(b) Includes home visits, community health education activities, and community organizing/development.

(c) The difference between total time paid for and time recorded for specific activities.

Note that the large differences in total hours for the year between physicians is due to the fact that several clinics had no physician for several months and to the fact that the number of days per week the physicians work in the surveyed clinics varied from 2 to 4.

Exhibit 3-8: Breakdown of Nurse Auxiliaries' Recorded Time (in Hours) by Type of Activity at Surveyed Clinics, 1993

Clinic	TIME IN HOURS											
	Clinical Care (a)		Outreach (b)		Administration		In Service Training		Time Not Accounted For (c)		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	535	28%	511	27%	451	23.5%	96	5.0%	327	17%	1,920	100%
San Antonio de Alao	1,553	81%	120	6%	52	2.7%	42	2.2%	153	8%	1,920	100%
Uzhar	662	33%	246	12%	614	30.4%	8	0.4%	491	24%	2,021	100%
Tumbunuma	372	26%	408	28%	497	34.5%	22	1.5%	140	10%	1,439	100%
El Quingue	848	44%	275	14%	164	8.5%	0	0.0%	633	33%	1,920	100%
El Aji	567	39%	260	18%	574	39.9%	5	0.3%	32	2%	1,438	100%
San Vicente 3	237	13%	520	30%	603	34.3%	4	0.2%	396	23%	1,760	100%
San Pablo 3	817	43%	216	11%	741	38.6%	28	1.5%	119	6%	1,921	100%
Campanacocha	867	45%	199	10%	616	32.1%	49	2.6%	189	10%	1,920	100%
ALL CLINICS	6,458	40%	2,755	17%	4,312	26.5%	254	1.6%	2,480	15%	16,259	100%

(a) Includes curative and preventive care and deliveries (only 4 hours total for deliveries).

(b) Includes home visits, health education activities, and community meetings.

(c) The difference between total time paid for and the time recorded for specific activities.

Exhibit 3-9: Referrals: Number and Percent of Referrals from Two Sources: Two-Month Recall Data on Household Survey (for SSC Members Only), and Clinic Records for all of 1993 (for Referrals Made by Physicians Only)

Clinic	NO. OF REFERRALS ACCORDING TO TWO-MONTH RECALL ITEM IN HOUSEHOLD SURVEY			NO. OF PATIENT REFERRALS IN 1993 MADE BY PHYSICIANS ACCORDING TO CLINIC RECORDS		
	Total No. of Illnesses Reported	No. Referred	% Referred	Total No. of Curative Care Visits to Physician	Total No. of Patients Referred	% Referred
Llactahurco	77	4	5.2%	498	23	4.6%
San Antonio de Alao	86	10	11.6%	491	37	7.5%
Uzhar	50	2	4.0%	756	42	5.6%
Tumbunuma	66	7	10.6%	343	22	6.4%
El Quingue	101	7	6.9%	397	14	3.5%
El Aji	47	6	12.8%	1,055	17	1.6%
San Vicente 3	20	2	10.0%	1,367	43	3.1%
San Pablo 3	33	4	12.1%	2,442	195	8.0%
Campanacocha	72	18	25.0%	491	22	4.5%
TOTAL	552	60	10.9%	7,840	415	5.3%

consultations in 1993. As seen in *Exhibit 3-9*, the clinic records show an average physician referral rate in 1993 of around five percent, similar to the 1991 figure from the SSC for the system as a whole. The rates ranged from 1.6 percent in El Aji clinic to eight percent in the San Pablo clinic. It is uncertain, however, if the physicians accurately recorded all referrals that they made. According to staff members interviewed, many patients who could otherwise have been treated at the clinics are referred because of a lack of medicines and medical equipment in the clinics. Although it is often the case that clinics experiencing drug shortages simply give patients prescriptions to be filled at private pharmacies, certain clinics may be inclined to refer them out to IESS facilities instead, where patients can receive free medicines. This may be the case in the San Pablo clinic, which recorded the highest referral rate of the nine clinics (8%), and which, according to household survey data presented in *Section 3.5*, was the least able of the nine clinics to meet the demand for prescribed medicines.

The two-month recall data indicates higher referral rates than the clinical data -- nearly 11 percent overall, which is one in every nine consultations, and 10 to 12 percent in five of the nine clinics. One reason for these higher rates is that they should include referrals by nurse auxiliaries as well, whereas the clinic data show only referrals by physicians. Although the accuracy these recall data can also be called into question, it seems reasonable to conclude from both the clinical and household data that the referral rates at the clinics surveyed are at least as much as the 5.5 percent rate recorded for the system as a whole in 1991.

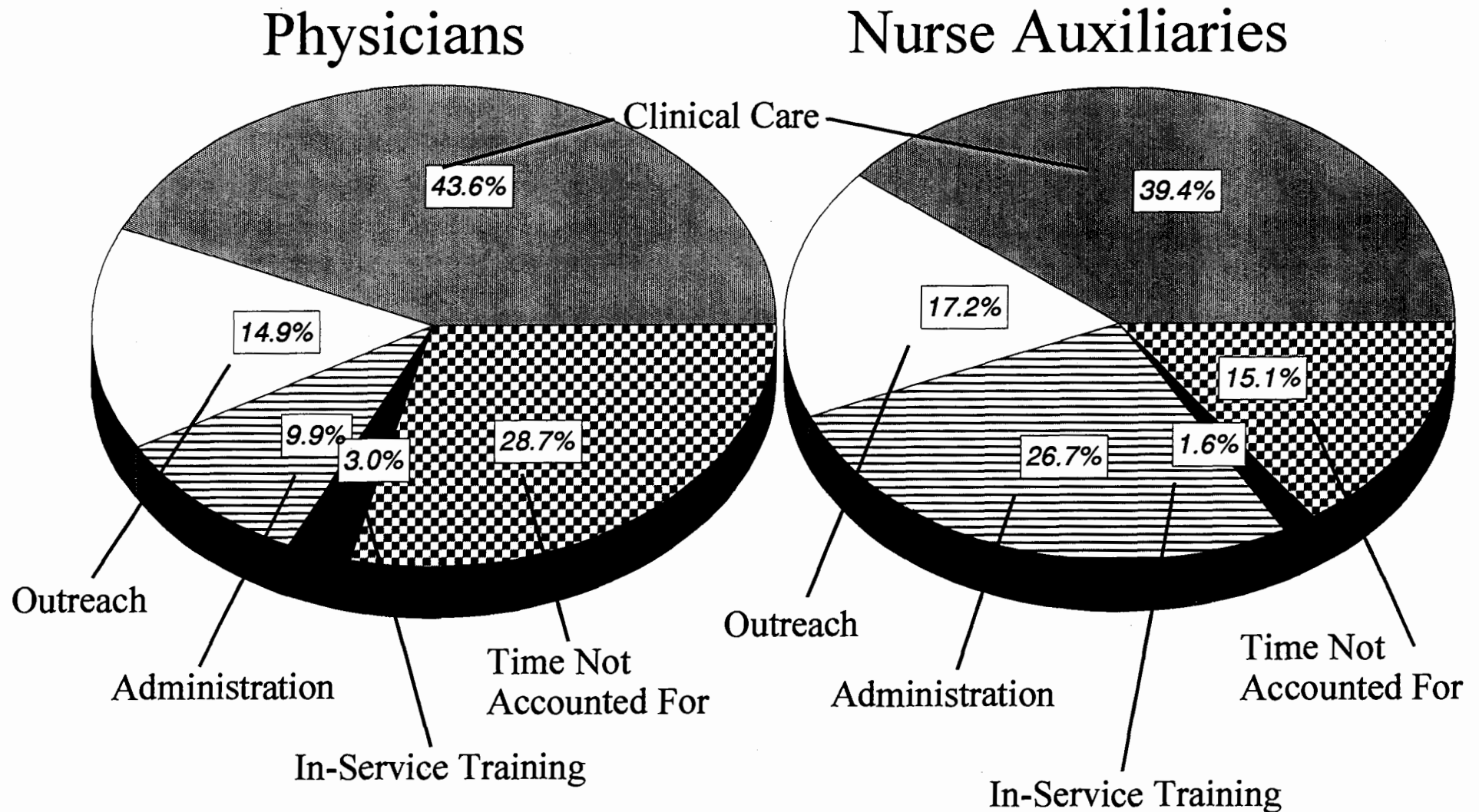
3.2.1.6 Staff Productivity

To interpret staff productivity data and to compare them across clinics, it is important to consider the case-mix of patients at the different clinics, since sicker patients will require more of the medical staff's time than other patients. Since SSC clinics mainly see primary care cases on an out-patient basis, it is unlikely that the case-mix differs significantly between clinics. Therefore, it is appropriate to compare the productivity of the medical staff across the nine clinics.

Two ways of measuring productivity of the clinical staff are available from the survey data. One is to examine the amount of their work time medical staff actually spend seeing patients. From *Exhibits 3-7 and 3-8 and Graph 3-1*, one can see that both physicians and nurses in 1993 spent on average only around 40 percent of their time seeing patients in the clinics. The main exceptions were the physician in San Pablo, who recorded 77 percent of her time performing clinical care, and the nurse auxiliary in the San Antonio de Alao clinic, who spent 81 percent of her time seeing patients in the clinic. Physicians spent another 6 to 30 percent of their time (15 percent on average) carrying out much needed outreach activities in the communities. Outreach activities occupied an average of 17 percent of the nurse auxiliaries time, ranging from six percent to 30 percent. Nonetheless, if one assumes that clinic staff recorded their activities accurately, it is clear from these data that both the physicians and nurse auxiliaries spent a considerable portion of their time -- on average 42 to 43 percent -- not performing direct health care to patients.

Much of the time that physicians spent not seeing patients in 1993 is shown in *Exhibit 3-7* as "time not accounted for". This "unaccounted for" time, which is the difference between the time the staff were paid for and the time recorded conducting specific activities, made up between 26 and 57 percent of the physician's time in 1993, for an average of 29 percent. Some of this time may be a result of poor record keeping; some of it could have been spent traveling to the clinics or for other activities.

Graph 3-1. Breakdown of Medical Staff's Recorded Time by Type of Activity at Surveyed Clinics, 1993



Unaccounted for time was considerably less for the nurse auxiliaries on the whole -- averaging 15 percent -- although it still made up between 23 and 33 percent of their time at three clinics (El Quingue, Uzhar, and San Vicente).

Administrative tasks also consume a significant amount of the clinical staff's time, especially for the nurse auxiliaries. Administrative duties occupied more than one-quarter of their time on average in 1993, and between 30 and 40 percent of their time in six of the nine clinics surveyed. The nurse auxiliaries are responsible for maintaining drug and medical supplies, processing membership applications, maintaining membership files, collecting payments from member organizations, among other tasks. Most physicians in the survey spend considerably less of their work time on administrative matters, which include overseeing supply orders and membership matters, supervising the nurse auxiliary, writing monthly reports, and other activities. These tasks occupied 10 percent of the physicians' total hours on average, but a more sizable amount (15 to 29 percent) of their time in the clinics in Tumbunuma, El Quingue and Uzhar.

If one assumes that most of the "accounted for" time was not the result of poor recordkeeping, and that this time was not spent seeing patients, one can conclude from these exhibits that too much of the physicians and nurse auxiliaries' time is spent on activities not directly related to providing patient care. In order to increase the efficiency of the clinics, especially that of the relatively expensive physicians, efforts must be made to increase the percentage of time that they spend directly providing health care, by reducing the time unaccounted for and that spent on administrative tasks. This assumes that utilization will increase when physicians provide more clinic hours. It should be pointed out, however, that one of the reasons that a substantial portion of staff's recorded time in many of the clinics is not spent on direct patient services may be because few patients are actually visiting the clinic on a daily basis.

Another way of measuring the productivity of clinical staff is to estimate the number of patients that they see when they do provide clinical care. *Exhibit 3-10* shows the average number of patients that physicians saw per hour during the time they provided clinical care in 1993 and the average length of a consultation, which was obtained from the clinical records sent to the SSC central office. (The data for the nurse auxiliaries were more difficult to interpret and therefore not used.). These data indicate that, when physicians were seeing patients, they were relatively productive, seeing on average 3.5 to 4.5 patients per hour, and spending between 13 and 17 minutes with each one. These data were remarkably similar across clinics. These data support anecdotal reports heard during the study that physicians are very busy during the hours they provide clinical care.

3.2.1.7 Training and Supervision

One can also see on *Exhibits 3-7 and 3-8* the amount of time recorded by the physicians and nurse auxiliaries for in-service training provided by the IESS in 1993. In-service training usually involves spending time at IESS hospitals to develop specialized skills. The amount of training varies considerably, from as little as two hours for the physician in Campanococha to 40 hours for the physician (the equivalent of one full-time week) in Lactahurco, with most doctors having received between 10 and 23 hours of training during the year. Five nurse auxiliaries received 22 or more hours of training during 1993, with one receiving 96 hours, the equivalent of 2.4 40-hour work weeks, while four nurse auxiliaries received little or no training.

Exhibit 3-10
Estimated Number of Patients Seen by the Physician Per Hour and Average Time Spent with Each Patient

Clinic	Avg. Number of Patients Per Hour	Avg. Time Spent Per Patient (min.)
Llactahurco	3.5	17.0
San Antonio de Alao	4.2	14.2
Uzhar	3.8	15.8
Tumbunuma	3.9	15.4
El Quingue	3.6	16.7
El Aji	3.8	15.8
San Vicente 3	4.5	13.3
San Pablo 3	3.7	16.2
Campanacocha	4.1	14.6

Source: Clinical records on number of consultations conducted by physician and number of hours spent performing clinical care for 1993

Medical staff in a number of clinics stressed the need and desire for additional and more frequent in-service training. The physicians in El Aji and San Pablo expressed interest in more training in gynecology and pediatrics, while the doctor in San Vicente wished to learn more in the areas of family planning, cancer prevention, and environmental health. The doctor in El Quingue recognized a need for training in public health. Nurse auxiliaries also expressed a desire for additional training; the one in San Pablo would like more training in basic nursing skills, while, interestingly, the nurse auxiliary in El Aji expressed a desire for training in community organizing and human relations.

The issue of the appropriateness of the training for SSC physicians and nurse auxiliaries should also be raised. The clinical training that staff receive at IESS hospitals, which are located mainly in urban areas, often involves specialized in-patient care. This care is often more appropriate for the health problems found in the urban areas than in the rural areas served by the SSC, and does not necessarily provide the most relevant training for SSC staff performing primarily primary care on an out-patient basis.

Information on supervisory visits conducted by central and regional-level SSC staff was obtained for eight of the nine clinics and reveals that little supervision was given to these clinics during the year preceding the survey. Physicians in five clinics (Llactahurco, El Aji, San Vicente, San Pablo, and Campanacocha) reported having no supervisory visits during the entire year, while the physician in Tumbunuma received two visits and the one in San Antonio de Alao was visited "occasionally". All of the nurse auxiliaries received one or two visits during this time period, with the exception of the one in El Aji, who received none. The few doctors who received visits found them of limited use; the doctor in San Antonio de Alao expressed frustration that no time was taken during the visits to attempt to solve the numerous problems that he saw with the clinic's operations. The nurse auxiliaries in Llactahurco, Tumbunuma, and San Vicente, for the other hand, found the supervisory visits more useful; the nurse auxiliary in Tumbunuma, in fact, claimed that the supervision that she received helped improve her work performance. Many of the staff interviewed felt that much more frequent and better quality supervision was needed.

3.2.2 Other (Non-SSC) Health Services

In addition to the SSC clinics, health services in the rural areas served by the SSC clinics are provided primarily by MSP facilities, traditional healers, and traditional birth attendants. There are very few private health clinics serving these rural areas. As shown in *Exhibit 3-3*, there are MSP facilities, mainly subcenters in the same or nearby parishes as the SSC facilities in this sample, although they may be considerably further from some communities and residents served by the SSC than the SSC clinic. The residents served by the San Vicente and San Pablo clinics, in the coastal region, have the greatest access to MSP and other non-SSC facilities, given the relatively good transportation system and population density in these areas. Most of the MSP facilities are supposed to have doctors available five full days a week, and therefore offer in theory a strong alternative to the SSC clinics for medical emergencies, deliveries and other acute care. However, anecdotal evidence suggests that MSP facilities are often unattended during official clinical hours, and thus may not in fact provide a much better alternative than the SSC clinics for emergency care.

Traditional healers are also commonly used and well respected, especially by the Indian population. The female doctor at the Campanacocha clinic claims that 30 percent of the population in her

area prefer to be treated by traditional healers than by her, and often visit the clinic only when the healer has failed to produce satisfactory results. Midwives are also reportedly the preferred choice of many women in the Indian areas for childbirth. In the coastal areas of San Pablo, San Vicente and El Aji, where the female population is generally better educated, practitioners of Western medicine are usually preferred over traditional practitioners; many women in the San Pablo area reportedly go to the MSP general hospital in St. Elena to delivery their child. Additional information on the use of non-SSC health services is provided in *Section 3.4*.

3.3 CHARGES FOR HEALTH CARE SERVICES

3.3.1 User Fees at SSC Clinics

Respondents in the household survey were asked what charges household members paid for consultations and drugs when they sought care for illnesses experienced in the two months preceding the survey.

Exhibits 3-11 and 3-12 show the charges paid by SSC members at SSC clinics for consultations and medicines, respectively. *Exhibit 3-11* shows that, although visits to SSC clinics are supposed to be free, some of the clinics are occasionally charging some patients. While 94 percent of the 552 visits made by SSC members to a SSC clinic were free of charge, according to these data, patients paid consultation fees of less than 1,000 sucres for 21 (4%) of these visits, and more than 3,000 sucres for 10 (2%) of the visits. The recall data show that only in one clinic -- Uzhar -- were all consultations made by SSC members reported to be free of charge. The most frequent use of consultation fees appears to be in the San Pablo clinic, which alone, was responsible for 42 percent (14 out of 33) of all the consultation fees reported in the recall data among SSC household members. The data show that the clinic charged patients a fee of less than 1,000 sucres for a substantial portion (42%) of the visits reported by respondents to this clinic over the two-month period. Most of the clinics surveyed, however, appeared to charge consultation fees in only a small minority of cases (five percent or less).

Exhibit 3-12 indicates that SSC clinics are also charging some patients for medicines that they dispense. According to the recall data, 88 percent of SSC members who received medicines from a SSC clinic during the two months preceding the survey did not pay for these medicines. Twelve percent of patients did pay, however, some as much as 30,000 sucres or more (more than US\$13.00). The San Pablo and Tumbunuma clinics appeared to charge drug fees the most often, 63 percent and 72 percent of the time, respectively. In half of the reported cases when drug fees were paid (30 out of 55), the charges were between 5,000 and 30,000 sucres (between US\$2.20 and \$13.19). Charges for drugs made up overall around 80 percent of the user fees that SSC members reported paying at SSC clinics.

There is some evidence in the recall data to suggest that patients going to SSC clinics who are not SSC members are charged for both consultations and drugs, and at considerably higher levels than SSC members (see *Exhibit 3-13*).

These recall data should be interpreted with caution, however. It is possible that, in some cases, respondents were actually reporting fees that they paid at private or MSP clinics, which they perhaps went to after visiting an unattended SSC clinic or one with drug stockouts. Information on clinic charges was

Exhibit 3-12: Charges (in Sucres) SSC Members Reported Paying for Drugs at SSC Clinics in the Two Months Preceding the Survey, by Clinic

Clinic	NUMBER AND PERCENT OF RESPONDENTS													
	No Charge		Less than 1,000 s.		1,000 – 5,000 s.		5,001 – 15,000 s.		15,001 – 30,000 s.		More than 30,000 s.		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	58	84%	2	3%	4	6%	2	3%	2	3%	1	1%	69	100%
San Antonio de Alao	68	94%	0	0%	2	3%	1	1%	0	0%	1	1%	72	100%
Uzhar	37	90%	0	0%	0	0%	1	2%	2	5%	1	2%	41	100%
Tumbunuma	42	72%	0	0%	3	5%	3	5%	6	10%	4	7%	58	100%
El Quingue	95	96%	0	0%	0	0%	0	0%	2	2%	2	2%	99	100%
El Aji	42	95%	0	0%	0	0%	1	2%	1	2%	0	0%	44	100%
San Vicente	10	71%	0	0%	0	0%	0	0%	2	14%	2	14%	14	100%
San Pablo	10	63%	0	0%	1	6%	4	25%	1	6%	0	0%	16	100%
Campanacocha	58	94%	0	0%	2	3%	0	0%	2	3%	0	0%	62	100%
ALL CLINICS	420	88%	2	0%	12	3%	12	3%	18	4%	11	2%	475	100%

Source: Recall questions on household survey

not obtained from the facilities survey which could have confirmed the household recall data. However, given the consistency of the data across clinics, it appears likely that SSC clinics are charging user fees for a portion of their SSC member patients.

It is not possible to determine from these data if clinics had established their own policies on which types of patients or which types of services or drugs to charge for (e.g. certain expensive or hard to get drugs), or whether, on the other hand, fees were charged on an ad hoc basis. It is also not possible to determine the uses of the collected fees. It may be that, in some cases, they are used to buy drugs or even to establish a revolving drug fund, although there was no evidence that this was the case at any of these nine clinics⁸. Nor is there evidence that the clinics most consistently collecting fees (San Pablo and Tumbunuma) had better drug supplies than those that did not (see *Section 3.5*).

3.3.2 A Comparison of SSC User Fees with Those of Other Providers

Exhibit 3-13 shows the average fees that respondents in the household survey reported paying to all providers in the two months preceding the survey⁹. All averages, including the SSC average of 538 sucres for consultations for SSC members and 3,296 sucres for drugs, include instances in which patients received free services, which, in the case of SSC members, was the majority of the time¹⁰. This table shows that, on average, SSC members paid considerably less for consultations and drugs at SSC clinics than they did for all other providers, including MSP clinics, where they paid on average, nearly three times more for both consultations and drugs. Of course, patients at MSP and private facilities do not pay dues as do SSC members. It is also interesting to note that non-members using SSC services paid on average more than five times the amount paid by members for both consultations and medicines.

These data obtained from the recall questions of the household survey indicate that there are many unanswered questions concerning user fees for SSC services. Further research is needed to determine if clinics are, in fact, regularly charging user fees, what their fee policies are, and what the collected funds are used for.

3.4 UTILIZATION OF HEALTH SERVICES IN THE SURVEY AREAS

The study examines the utilization of SSC and alternative health services in the survey areas from several aspects. First, in *Section 3.4.1*, we examine the SSC enrollment rates among the population in the catchment areas of the survey. We have also estimated the average monthly and daily utilization of the SSC clinics from clinical records, which is presented in *Section 3.4.2*. As a further means of

⁸ Some SSC clinics have reportedly established their own revolving drug funds in order to avoid the chronic drug shortages common throughout the system, although there is no evidence that this is the case at any of the nine clinics that participated in the survey.

⁹ Since data on fees were presented in terms of ranges (that is, in categories), the midpoints of these ranges were used to obtain averages.

¹⁰ The mean consultation fee of 538 sucres is a result of the fact that, although 94% of the respondents said they paid no consultation fee during their last visit, five respondents claimed to pay 20,000 sucres or more (and three reportedly paid up to 60,000 sucres).

Exhibit 3-14: SSC Enrollment Rates: Breakdown of Households in Survey Areas by Those Enrolled in SSC, Formerly Enrolled, and Never Enrolled

Clinic	Province	Households Enrolled in SSC		Households that left SSC		Households Never Enrolled		Total Households	
		No.	%	No.	%	No.	%	No.	%
Llactahurco	Cotapaxi	228	52%	22	5%	185	43%	435	100%
San Antonio de Alao	Chimborazo	243	56%	160	37%	30	7%	433	100%
Uzhar	Azuay	306	43%	280	40%	120	17%	706	100%
Tumbunuma	Loja	371	81%	47	10%	39	9%	457	100%
El Quingue	Esmeraldas	188	75%	12	5%	50	20%	250	100%
El Aji	Manabi	431	48%	163	18%	297	33%	891	100%
San Vicente	Manabi	344	51%	105	16%	225	33%	674	100%
San Pablo 3	Guayas	762	76%	30	3%	217	22%	1,009	100%
Campanacocha	Napo	140	74%	20	11%	30	16%	190	100%
TOTAL		3,013	60%	839	17%	1,193	24%	5,045	100%

Exhibit 3-15: Breakdown of Household Survey Sample by Income Level and SSC Membership Status

SSC Member-ship Status	INCOME GROUP (BY AVERAGE MONTHLY INCOME OF HOUSEHOLD)						Total	
	< 66,000 s.*	66,000 – 100,000 s.	>100,000 – 200,000 s.	>200,000 s.	No response/ Missing			
Member	166 26.2%	114 18.0%	197 31.1%	108 17.0%	49 7.7%		634	100.0%
Non-Member**	52 13.6%	48 12.5%	129 33.7%	136 35.5%	18 4.7%		383	100.0%
TOTAL	218 21.4%	162 15.9%	326 32.1%	244 24.0%	67 6.6%		1,017	100.0%

* Below the minimum living wage set by the government.

** Includes both households that were formerly members and those that have never joined the SSC.

proportion of SSC households in the sample earning less than the minimum living wage (66,000 sucres per month at the time of the survey) was double that of non-member households (26% vs. 14%). Similarly, forty-four percent of SSC member households earned 100,000 sucres or less per month versus 26 percent of non-member households. Conversely, the proportion of non-member households that earned more than 200,000 sucres per month was double the proportion of SSC households in that income group (35% vs. 17%). These data indicate that SSC enrolled households do tend to be poorer than households not participating in the system, and that therefore, the SSC is indeed reaching those who can least afford to pay for health care. However, these conclusions can only be tentative since the household sample is not a representative of the rural population as a whole.

3.4.2 Utilization of SSC Services: Data from Clinical Records

From the clinic records of staff time and activities, we have estimated the average number of consultations conducted by the physicians and nurse auxiliaries as an indication of patient volume of SSC clinics. These daily utilization rates, shown in *Exhibit 3-16*, are based on estimates of the number of days during which the physician was actually present in the clinic, which, in most cases was only two or three days per week. Periods of time when no physician (or nurse) was working at the clinic were also subtracted from the total number of days¹¹. These estimates show that, in six of the nine clinics surveyed, physicians saw an average of only five to eight patients per day on the days that they worked. In seven of the nine clinics, nurse auxiliaries saw two to eight patients per day on average. For the sample as a whole, physicians saw 10 patients per day, and nurse auxiliaries saw eight patients per day. (It is unclear from these data whether the physicians and nurse auxiliaries may have seen some of the same patients.) The fact that the number of consultations to the nurse auxiliary and to the physician more or less correspond in each clinic gives credence to statements made during the survey that patients tend to visit the clinic only on days when the physician is present.

The most utilized clinics appear to be those in the coastal areas of El Aji, San Pablo and El Quingue, which averaged 22, 15 and 10 physician consultations per day, respectively. The least utilized, on the other hand, were the four clinics in the mountain region and the one clinic in the Amazon, which averaged only five to eight physician consultations per day. A major factor affecting the daily number of clinic visits is the number of SSC affiliated households that each clinic serves. The two most utilized clinics in the survey, El Aji and San Pablo, are also the two with the highest number of member households, 431 and 762 respectively (see *Exhibit 3-14*), versus between 140 and 344 in the remaining seven clinic sites. The four clinics with the highest number of daily visits to the physician (El Aji, San Pablo, El Quingue and San Vicente) had an average of 431 member households, compared with an average of 258 in the other five clinics.

Exhibit 3-17, which gives estimates of the number of clinic visits made in 1993 per SSC-affiliated household and by individual member, indicates that membership size does indeed explain much of the differences in clinic utilization. Three clinics with low patient volume, in terms of average number of patients per day (Llactahurco, Uzhar, and San Antonio de Alao) had higher rates of clinic visits per

¹¹ However, the estimated number of days staff worked in the clinics does not take into account vacation time or absences due to in-service training. Also, it is assumed that staff who started working at the clinic during the year began on the first day of the month that they arrived. These omissions could have the effect of somewhat under-estimating the daily utilization rates.

Exhibit 3-16: Estimated Patient Volume of SSC Sample Clinics during 1993: Average Number of Consultations Conducted by Physicians and Nurse Auxiliaries (Based on Clinic Records)

Clinic Site	PHYSICIAN CONSULTATIONS				NURSE AUXILIARY CONSULTATIONS			
	No. of Consultations Conducted in 1993	No. Months Physician Present (a)	Avg. No. of Consultations Per Month (b)	Avg. No. of Consultations Per Day (c)	No. of Consultations Conducted in 1993	No. Months Nurse Auxiliary Present (a)	Avg. No. of Consultations Per Month (d)	Avg. No. of Consultations Per Day (e)
Llactahurco	680	9	75.6	5.7	1,409	12	117.4	5.3
San Antonio de Alao	577	12	48.1	5.5	1,229	12	102.4	4.7
Uzhar	803	12	66.9	5.1	1,438	12	119.8	5.4
Tumbunuma	360	5	72.0	8.2	1,538	9	170.9	7.8
El Quingue	443	5	88.6	10.1	3,206	12	267.2	12.1
El Aji	1,155	6	192.5	21.9	1,569	9	174.3	7.9
San Vicente 3	1,399	12	116.6	8.8	580	11	52.7	2.4
San Pablo 3	3,186	12	265.5	15.1	4,849	12	404.1	18.4
Campanacocha	643	6	107.2	8.1	1,798	12	149.8	6.8
ALL CLINICS				9.8				7.9

(a) Does not take vacation time into account.

(b) Only for the months during which a physician was employed in the clinic.

(c) Only for the days during which a physician is present at the clinic (2-4 days per week). An average of 22 working days per month is assumed.

(d) Only for the months during which a nurse auxiliary was employed in the clinic.

(e) This assumes that the nurse auxiliary works at the clinic 5 days per week. An average of 22 working days per month is assumed.

Exhibit 3–17: Estimated Number of Visits Made to SSC Clinics in 1993 Per SSC–Affiliated Household and Per SSC Member (Based on Clinic Records).

Clinic	No. of Visits Made in 1993 to SSC Clinic*	No. of SSC Affiliated Households	No. of Visits Per SSC Affiliated Household	Estimated No. of SSC Members**	Estimated No. of Visits Made in 1993 Per SSC Member
Llactahurco	2,089	228	9.2	1,254	1.7
San Antonio de Alao	1,806	243	7.4	1,337	1.4
Uzhar	2,241	306	7.3	1,683	1.3
Tumbunuma	1,898	371	5.1	2,041	0.9
El Quingue	3,649	188	19.4	1,034	3.5
El Aji	2,724	431	6.3	2,371	1.1
San Vicente	1,979	344	5.8	1,892	1.0
San Pablo	8,035	762	10.5	4,191	1.9
Campanacocha	2,441	140	17.4	770	3.2
ALL CLINICS	26,862	3,013	8.9	16,572	1.6

* Includes visits made to SSC clinics by non–SSC individuals, which are assumed to be a small portion of total visits.

** These figures are based on an estimate of 5.5 persons per household.

individual SSC member (between 1.3 and 1.7) than did the El Aji and San Vicente clinics (1.0 to 1.1), which saw more patients per day. On the other hand, higher rates of utilization per member appear to be a contributing factor to the greater volume of patients at the San Pablo and El Quingue clinics, where members made an estimated 1.9 and 3.5 visits in 1993, respectively, compared to the average of 1.6 for all nine clinics. These estimates must be interpreted with caution, however, and are likely to be over-estimates of utilization rates per member, since visits to the physician and the nurse auxiliary have been added together and thus assumed to be separate visits, whereas patients, could, in fact, be seeing both practitioners during a single visit. In addition, the figures on number of visits include those made by non-members, although they make up presumably a relatively small percentage of SSC clinic visits. Despite these problems, which should not greatly affect comparisons across clinics, these data indicate that, although the absolute number of member households is a strong determinant in the number of patients visiting a clinic, utilization rates per SSC member is another factor, and can vary considerably from clinic to clinic.

As discussed in later sections, other likely causes for the low utilization rates in several of the clinics are inadequate supplies of drugs and equipment, the limited hours physicians are available, and the difficulty of some in reaching the clinics. Other possible explanations for the regional differences in the utilization of SSC clinics are that the clinics are more accessible in the coastal areas, and their population is on the whole more educated (especially in the area served by the San Pablo clinic), and thus more apt to seek Western medical care than in more traditional areas.

3.4.3 Utilization of all Health Services: Data from the Household Survey

3.4.3.1 Utilization of Curative Care Services

Data from the household survey also give an indication of how often SSC members use the SSC facilities and where they go when they don't use them. The responses of SSC households concerning where they sought care for the illnesses they had had in the past two months (described in *Section 3.1*) are shown in *Exhibit 3-18*. This table shows that, overall, 61 percent of SSC household members with illnesses sought care at SSC clinics, with a range from 34 to 85 percent. SSC members in the areas of El Aji, El Quingue, San Antonio de Alao, and Llactahurco were the most likely to use the SSC clinics, with 68 to 85 percent of those with reported illnesses going to these facilities. Compared to similar data on seeking care in other countries, these figures on the use of SSC facilities appear quite high.

These data also show that overall, 17 percent of respondents sought care from non-SSC providers, including MSP facilities, private clinics, and traditional healers and midwives. On average, nine percent or so of SSC members went to a MSP health center or general hospital. The highest utilization of MSP facilities among SSC members was reported in the coastal areas of San Vicente and San Pablo, where communities have better transportation options and are much less isolated than in the mountainous areas. Private clinics were an option for another two to 14 percent of those ill; these facilities were used most by SSC members in the Uzhar clinic area (14%), and least in the isolated area of Campanacocha (1.6%). In all, SSC members in the Uzhar and San Pablo survey sites were the most likely to seek alternatives to SSC services, according to these data. This is despite the fact that the San Pablo clinic is the most

Exhibit 3 – 18: Where SSC Members Sought Health Care: Proportion of Illnesses Reported among SSC Family Members during the Two Months Preceding the Survey by the Site where Care was Sought

Clinic Site	PERCENTAGE OF REPORTED ILLNESSES:								TOTAL	
	SSC Clinic	MSP Health Center	General Hospital	Private Clinic	Traditional Healer/TBA	No Care Sought	Other	No.	%	
Llactahurco	68%	5%	1%	5%	1%	19%	0%	113	100%	
San Antonio de Alao	72%	0%	3%	5%	0%	19%	2%	120	100%	
Uzhar	47%	7%	4%	14%	1%	25%	3%	107	100%	
Tumbunuma	52%	5%	1%	4%	3%	34%	1%	128	100%	
El Quingue	80%	2%	2%	4%	0%	9%	3%	129	100%	
El Aji	85%	0%	2%	5%	0%	5%	2%	55	100%	
San Vicente 3	53%	21%	3%	5%	3%	8%	8%	38	100%	
San Pablo 3	34%	9%	13%	7%	2%	28%	6%	96	100%	
Campanacocha	58%	8%	6%	2%	2%	22%	3%	125	100%	
TOTAL	61%	6%	4%	6%	1%	21%	3%	911	100%	

Exhibit 3 – 19: Where Persons Not Belonging to the SSC Sought Health Care: Percentage of Total Illnesses Reported among Non – SSC Family Members during the Two Months Preceding the Survey by the Site Where Care was Sought

Clinic Site	PERCENTAGE OF REPORTED ILLNESSES:								
	SSC Clinic	MSP Health Center	General Hospital	Private Clinic	Traditional Health/TBA	No Care Sought	Other	TOTAL No.	%
Llactahurco	5%	21%	7%	14%	0%	50%	2%	42	100%
San Antonio de Alao	15%	10%	13%	15%	5%	38%	5%	40	100%
Uzhar	3%	18%	11%	19%	1%	46%	3%	101	100%
Tumbunuma	6%	6%	0%	25%	0%	63%	0%	16	100%
El Quingue	17%	7%	11%	28%	0%	37%	0%	54	100%
El Aji	29%	18%	22%	24%	0%	0%	7%	45	100%
San Vicente 3	17%	20%	37%	17%	0%	3%	6%	35	100%
San Pablo 3	0%	33%	11%	15%	4%	37%	0%	27	100%
Campanacocha	0%	50%	17%	0%	0%	33%	0%	12	100%
TOTAL	11%	18%	14%	19%	1%	34%	3%	372	100%

Exhibit 3-20: Where SSC Members Say They Usually Seek Health Care When They Don't Use SSC Facilities

Clinic Site	NUMBER OF RESPONSES GIVEN (UP TO THREE FOR EACH RESPONDENT)													
	MSP General Hospital		MSP Health Center		Private Clinic		Traditional Health/TBA		Other/ Cooperative		No Other Place		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	24	20.2%	38	31.9%	23	19.3%	4	3.4%	0	0.0%	30	25.2%	119	100.0%
San Antonio de Alao	28	24.1%	33	28.4%	23	19.8%	2	1.7%	1	0.9%	29	25.0%	116	100.0%
Uzhar	36	35.6%	22	21.8%	29	28.7%	4	4.0%	0	0.0%	10	9.9%	101	100.0%
Tumbunuma	9	10.5%	30	34.9%	10	11.6%	8	9.3%	0	0.0%	29	33.7%	86	100.0%
El Quingue	9	13.4%	21	31.3%	4	6.0%	2	3.0%	2	3.0%	29	43.3%	67	100.0%
El Aji	56	31.8%	55	31.3%	25	14.2%	38	21.6%	1	0.6%	1	0.6%	176	100.0%
San Vicente 3	51	30.5%	48	28.7%	26	15.6%	41	24.6%	1	0.6%	0	0.0%	167	100.0%
San Pablo 3	55	31.6%	51	29.3%	42	24.1%	7	4.0%	12	6.9%	7	4.0%	174	100.0%
Campanacocha	16	21.6%	20	27.0%	6	8.1%	12	16.2%	0	0.0%	20	27.0%	74	100.0%
TOTAL	284	26.3%	318	29.4%	188	17.4%	118	10.9%	17	1.6%	155	14.4%	1,080	100.0%

Exhibit 3–21: Reasons Given for Why SSC Members Seek Health Care with Non–SSC Providers

Clinic Site	NUMBER OF RESPONSES GIVEN (UP TO THREE FOR EACH RESPONDENT)											
	They're closer		Because of Good Service		Because You Don't Pay		Because They Give Out Medicines		There aren't Other Services		Other	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	18	23.1%	28	35.9%	8	10.3%	9	11.5%	8	10.3%	7	9.0%
San Antonio de Alao	8	10.7%	25	33.3%	5	6.7%	7	9.3%	13	17.3%	17	22.7%
Uzhar	5	7.0%	30	42.3%	15	21.1%	6	8.5%	8	11.3%	7	9.9%
Tumbunuma	19	34.5%	10	18.2%	5	9.1%	4	7.3%	4	7.3%	13	23.6%
El Quingue	10	22.7%	11	25.0%	9	20.5%	4	9.1%	5	11.4%	5	11.4%
El Aji	57	32.8%	55	31.6%	8	4.6%	5	2.9%	49	28.2%	0	0.0%
San Vicente 3	45	29.2%	50	32.5%	11	7.1%	17	11.0%	25	16.2%	6	3.9%
San Pablo 3	42	27.1%	59	38.1%	18	11.6%	8	5.2%	20	12.9%	8	5.2%
Campanacocha	12	20.7%	6	10.3%	10	17.2%	0	0.0%	10	17.2%	20 *	34.5%
TOTAL	216	25.0%	274	31.7%	89	10.3%	60	6.9%	142	16.4%	83	9.6%

* 14 of these "other" responses referred to transportation problems getting to the SSC clinic.

Very few individuals reported going to a traditional healer or midwife for the treatment of these reported illnesses. This may be due in part to the fact that the illnesses read to the respondents follow the disease categories used by the government, which are based on Western concepts of disease. Since conditions for which people may seek traditional medicine -- such as the evil eye ("mal de ojo") and shock ("espanto" or "susto") -- were not likely to be reported for these recall questions, these data may tend to underestimate the use of traditional practitioners by SSC members.

A significant portion of those reporting illnesses (19 to 34 percent) in the four clinic areas in the mountains, in San Pablo, and in Campanacocha sought no health care for their illnesses. According to these data, sick persons were most likely to seek care in the coastal areas served by the El Aji, San Vicente, and El Quingue clinics.

The responses from non-SSC households regarding health services utilization for curative care, shown in *Exhibit 3-19*, shows, unsurprisingly, a much greater use of MSP facilities (32% of reported illnesses in the overall sample) and private clinics (14% to 28% in all areas but Campanacocha) than among SSC members. The significant use of private clinics among non-members (19% overall) also reflects the higher incomes, in general, of non-member households. Non-members also sought care at SSC clinics, especially those in El Aji (29% of those with reported illnesses), El Quingue (17%), and San Vicente (17%). Care must be taken in interpreting these data, however, given the small number of reported illnesses involved.

It is also important to note that non-members were less likely to seek any care for their illnesses than SSC affiliates. Whereas 21 percent of the overall sample of SSC members reporting illnesses in the preceding two months sought no care, more than one-third of non-members did not seek care. The differences between members and non-members in not seeking care outside of the home was greatest in the mountain areas served by the Lactahurco, Uzhar and Tumbunuma clinics and in the El Quingue survey site. These data seem to indicate that, despite the reported problems with the SSC health services, SSC members are receiving more health care than non-members, especially those living in the more isolated areas of the country.

Responses to the general question on where SSC members usually seek health care when they don't go to the SSC clinic (*Exhibit 3-20*) provides additional data on utilization. The table shows the total of up to three answers that each respondent could give. The most common responses were: MSP health centers, MSP general hospitals, and private clinics, in that order. A good portion of respondents in El Quingue, Tumbunuma, Campanacocha, Lactahurco, and San Antonio de Alao (25 to 43%) indicate that they use SSC facilities exclusively ("no other place"), more or less confirming the two-month recall data in *Exhibit 3-18*, which showed a heavy reliance in these areas on the SSC clinics. These data also indicate a greater use of traditional healers and TBAs than did the two-month recall question, especially in the El Aji and San Vicente survey sites.

Respondents were also asked why they use these alternatives to the SSC facilities when they do. As shown in *Exhibit 3-21*, the most common reasons given to this close-ended question were that these alternatives provided good service (32% of all responses), that they're closer to their homes (25% overall), and that, apart from the SSC clinic, there are not other health services available (16%). The "good service" response may be related to the fact that, at least in principal, physicians at MSP facilities

are at present on a daily basis¹² and that private clinics offer more extended hours (e.g. evenings) than do the SSC clinics. The proximity of non-SSC facilities to their homes was particularly an issue in Tumbunuma and El Aji, where this reason accounted for one-third of all responses. Fewer respondents - seven percent overall -- gave as a reason for visiting non-SSC facilities that these other facilities give out medicines. Although there are reported shortages of drugs at many SSC clinics and the ratings by respondents on the drug availability at SSC facilities were relatively low, patients who could not obtain their medicines at the SSC clinics seem to rely more on pharmacies than on MSP or other facilities, as discussed in *Section 3.5*. This may reflect a problem of inadequate drug supplies at MSP facilities that is equal to or greater than that in SSC clinics. The fact that 10 percent of responses were "because you don't pay" (at non-SSC facilities) may reflect the fact that some SSC facilities appear to be charging for drugs and consultations, as discussed above in *Section 3.3*.

In summary, utilization data from the household survey indicate that SSC members are more likely than non-members to seek health care when they are ill. The survey data also show that SSC members, especially those in the more isolated parts of the country, rely heavily on SSC clinics for their health needs. Nonetheless, a significant portion of SSC member households (17 percent overall) sought health care from providers other than SSC clinics during the two-month recall period, even though they continued to contribute monthly to the SSC. The main reasons they gave for seeking care elsewhere were the better and more extensive services offered by other providers and the closer distance of these providers from their homes.

3.4.3.2 Utilization of Preventive Care Services

Exhibits 3-22 and 3-23 show where members of the SSC-affiliated families included in the household survey received preventive health care in the two preceding months. A total of 321 well-baby visits (*Exhibit 3-22*) were made, 222 or 69 percent of which were for child immunizations. Overall, 56 percent of well-baby visits were made to the SSC clinics, 29 percent were to MSP health centers or hospitals, and other 10 percent were conducted through schools (mainly immunizations). The SSC facilities were the largest source of well-baby care for SSC members in San Antonio de Alao (79% of visits), El Quingue (78%), and Tumbunuma (65%). Since few SSC clinics have vaccines on a regular basis, these immunization services were most likely provided during MSP immunization campaigns. The SSC facilities take part in these campaigns and are provided vaccines by the MSP.

SSC members were most likely to use non-SSC facilities for well-baby services in the survey sites served by the San Pablo (24%), Uzhar (34%) and Campanacocha (38%) clinics. Most of these non-SSC visits were made to MSP facilities, 84 percent of which were for immunization services. These data indicate that, since most SSC clinics do not provide immunizations on a regular basis, SSC members turn to the MSP facilities to meet at least part of their immunization needs. It is likely that, due to the lack of routine immunization services provided at the SSC clinics, children in SSC-affiliated households are not being adequately immunized. This is especially true at the San Vicente clinic, where only one immunization visit (out of 60 households) was reported in the last two months among SSC-affiliated respondents.

¹² Although anecdotal reports suggest that MSP facilities are often unattended during regular clinic hours.

Exhibit 3–22: Where SSC Family Members Received Well–Baby and Immunization Services: Number of Services Received during the Two Months Preceding the Survey, by Provider

Clinic Site	NUMBER OF SERVICES RECEIVED:											
	SSC Clinic		MSP Health Center/Hosp.		Private Clinic/ Traditional Healers/TBAs		Schools		Other		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	31	58%	16	30%	0	0%	6	11%	0	0%	53	100%
San Antonio de Alao	41	79%	3	6%	0	0%	6	12%	2	4%	52	100%
Uzhar	10	34%	14	48%	0	0%	3	10%	2	7%	29	100%
Tumbunuma	11	65%	6	35%	0	0%	0	0%	0	0%	17	100%
El Quingue	45	78%	12	21%	0	0%	0	0%	1	2%	58	100%
El Aji	7	70%	3	30%	0	0%	0	0%	0	0%	10	100%
San Vicente 3	3	43%	0	0%	0	0%	4	57%	0	0%	7	100%
San Pablo 3	9	24%	17	46%	0	0%	6	16%	5	14%	37	100%
Campanacocha	22	38%	22	38%	0	0%	6	10%	8	14%	58	100%
TOTAL	179	56%	93	29%	0	0%	31	10%	18	6%	321	100%

Source: Recall data from the household survey.

Exhibit 3–23: Where SSC Family Members Received Reproductive Health Care Services: Number of Services Received during the Two Months Preceding the Survey, by Provider*														
Clinic Site	NUMBER OF SERVICES RECEIVED:													
	SSC Clinic		MSP Health Center		General Hospital		Private Clinic		Traditional Healer/TBA		Other		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	18	82%	2	9%	2	9%	0	0%	0	0%	0	0%	22	100%
San Antonio de Alao	9	90%	0	0%	1	10%	0	0%	0	0%	0	0%	10	100%
Uzhar	7	70%	2	20%	1	10%	0	0%	0	0%	0	0%	10	100%
Tumbunuma	4	100%	0	0%	0	0%	0	0%	0	0%	0	0%	4	100%
El Quingue	24	83%	1	3%	3	10%	0	0%	0	0%	1	3%	29	100%
El Aji	4	67%	1	17%	1	17%	0	0%	0	0%	0	0%	6	100%
San Vicente 3	4	80%	0	0%	1	20%	0	0%	0	0%	0	0%	5	100%
San Pablo 3	7	39%	5	28%	1	6%	3	17%	0	0%	2	11%	18	100%
Campanacocha	8	80%	0	0%	0	0%	0	0%	2	20%	0	0%	10	100%
TOTAL	85	75%	11	10%	10	9%	3	3%	2	2%	3	3%	114	100%

* Reproductive Health Services include pre–natal care, childbirth services, and family planning.

Source: Recall data from the household survey.

Exhibit 3-23 shows where SSC members interviewed sought reproductive health services in the past two months. These services include pre-natal, post-natal, childbirth, and family planning services. The majority in all survey sites received care at the SSC clinics, with the exception of those in the San Pablo area, where only seven out of 18 (39%) women who sought reproductive health services visited the SSC clinic, the rest going to the MSP facilities, private clinics, or other sources. One-third of all reproductive health visits reported, and 35 percent of those to SSC facilities, were for family planning services. These data indicate that, despite the greater demand for family planning services in the San Pablo area as compared to other survey sites, and the fact that the San Pablo clinic provided more family planning consultations in 1993 than any of the other clinics (see *Section 3.2.1.5* above), the SSC clinic may still not be meeting the family planning needs of its members in this area.

3.5 USERS/PERCEPTIONS AND OPINIONS OF SSC AND NON-SSC HEALTH CARE SERVICES

SSC members who participated in the household survey were asked a series of questions concerning how they felt about SSC services. Their responses regarding the main advantages and disadvantages of the SSC are shown in *Exhibits 3-24 and 3-25*, respectively. The fact that SSC medical visits and drugs are free was the most frequent response, accounting for around one-third of all responses (each respondent could name up to three advantages). Since patients going to MSP facilities must pay for medicines, the free drugs that the majority of SSC patients seem to get at the SSC facilities are recognized by affiliates as a major advantage of using these facilities over those run by the MSP. Other frequently cited advantages were the proximity of the clinics to their homes and the fact that travel costs to other towns were avoided by using SSC clinics, which together accounted for 35 to 43 percent of all responses. A significant number of respondents also cited as an advantage the quality of the health professionals at the SSC facilities.

The main disadvantages given by respondents (*Exhibit 3-25*) were the lack of medicines at the clinics, which accounted for 30 percent of responses overall; the fact that the staff do not work in the clinics full-time, which made up 52 percent of responses in San Vicente and 17 percent of responses overall; and the lack of emergency services at the clinics. (Note that 32 percent of respondents overall mentioned no disadvantages of the SSC services.) The lack of full-time staff may refer mainly to the physicians and dentists, all of whom are part-time, as opposed to the nurse auxiliaries. Although the proximity of other (non-SSC) facilities was a frequently-cited reason for using non-SSC services, as shown above in *Exhibit 3-21*, only one percent of respondents overall gave as the main disadvantage the fact that the SSC clinics are too far from their homes. It is also interesting to note that very few people (1.2 percent overall) cited poor medical care as the major disadvantage to using SSC service. This finding corresponds with the high ratings that the clinics receive for the quality of their services and staff, as discussed below.

The ratings by SSC members in the survey on various aspects of SSC health services are given in *Exhibits 3-26 and 3-27*. Sixty percent of respondents overall rated the proximity of the SSC clinics from their homes as good, with a range from 97 percent of those in El Quingue to only 22 percent of respondents in San Vicente. Fair and poor ratings for proximity were greatest in the survey sites of San Vicente (79%), San Pablo (56%), Tumbunuma (45%), and El Aji (40%). Respondents in these same areas were the most apt to mention the proximity of non-SSC health services as a major reason for using alternatives to the SSC, as shown above in *Exhibit 3-21*. The clinics' hours of operation received

Exhibit 3-24: Advantages of Using SSC Services According to SSC Members

Clinic Site	NUMBER OF RESPONSES GIVEN*:													
	Visits and Medicines are Free		Health Professionals are Good		Proximity to Home		Doesn't involve costs to travel out of town		Other		Missing/No Response		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	72	32%	47	21%	65	29%	27	12%	3	1%	10	4%	224	100%
San Antonio de Alao	70	31%	53	24%	56	25%	34	15%	1	0%	10	4%	224	100%
Uzhar	61	38%	27	17%	42	26%	21	13%	1	1%	9	6%	161	100%
Tumbunuma	68	35%	35	18%	42	22%	36	19%	2	1%	9	5%	192	100%
El Quingue	31	32%	16	17%	19	20%	17	18%	2	2%	11	11%	96	100%
El Aji	57	31%	55	30%	42	23%	22	12%	6	3%	0	0%	182	100%
San Vicente 3	60	34%	35	20%	36	21%	38	22%	3	2%	2	1%	174	100%
San Pablo 3	73	33%	42	19%	42	19%	50	23%	2	1%	11	5%	220	100%
Campanacocha	48	34%	22	16%	24	17%	36	26%	3	2%	8	6%	141	100%
TOTAL	540	33%	332	21%	368	23%	281	17%	23	1%	70	4%	1,614	100%

* The total of all three responses that respondents could give.

Exhibit 3-25: Greatest Disadvantage of Using SSC Services According to SSC Members

Clinic Site	PROPORTION OF RESPONSES GIVEN:									
	N	No Disadvantage	Lack of Medicines	Staff aren't Full-Time	They don't Handle Emergencies	Entails More Expense	Medical Care is Poor	It's Too Far Away	Other/No Response	TOTAL
Llactahurco	90	48%	29%	6%	8%	3%	1%	1%	4%	100%
San Antonio de Alao	90	40%	26%	9%	18%	1%	0%	0%	7%	100%
Uzhar	63	30%	37%	14%	11%	3%	3%	0%	2%	100%
Tumbunuma	77	29%	38%	19%	8%	1%	0%	5%	0%	100%
El Quingue	39	54%	21%	18%	3%	0%	3%	0%	3%	100%
El Aji	61	38%	18%	16%	25%	2%	2%	0%	0%	100%
San Vicente 3	60	3%	32%	52%	12%	2%	0%	0%	0%	100%
San Pablo 3	93	16%	35%	25%	15%	1%	3%	0%	4%	100%
Campanacocha	60	40%	30%	3%	7%	0%	0%	3%	17%	100%
TOTAL	633	32%	30%	17%	12%	2%	1%	1%	4%	99%

Note: Only one response was given per person.

Exhibit 3–26: Ratings of SSC Services by SSC Members: Proximity from Home and Hours of Operation

Clinic	N	PERCENTAGE OF RESPONDENTS' ANSWERS:							
		Proximity from Home to Clinic				Hours of Operation			
		Good	Fair	Poor	NR/ Missing	Good	Fair	Poor	NR/ Missing
Llactahurco	90	74%	21%	3%	1%	87%	11%	2%	0%
San Antonio de Alao	90	77%	16%	2%	6%	54%	39%	0%	7%
Uzhar	64	65%	12%	7%	3%	59%	28%	9%	3%
Tumbunuma	77	53%	32%	13%	1%	62%	31%	5%	1%
El Quingue	39	97%	0%	0%	3%	87%	8%	0%	5%
El Aji	60	59%	38%	2%	3%	82%	16%	2%	0%
San Vicente 3	60	22%	67%	12%	0%	52%	40%	8%	0%
San Pablo 3	93	44%	43%	13%	0%	59%	33%	4%	3%
Campanacocha	60	43%	40%	10%	7%	83%	10%	0%	7%
TOTAL	633	60%	31%	7%	3%	68%	25%	3%	3%

Exhibit 3–27: Ratings of SSC Services by SSC Members: Treatment Received and Availability of Medicines

Clinic	N	PERCENTAGE OF RESPONDENTS' ANSWERS							
		Treatment Received				Availability of Medicines			
		Good	Fair	Poor	NR/ Missing	Good	Fair	Poor	NR/ Missing
Llactahurco	90	91%	7%	0%	2%	56%	26%	16%	2%
San Antonio de Alao	90	88%	6%	0%	7%	37%	56%	2%	6%
Uzhar	64	91%	5%	0%	5%	25%	50%	20%	5%
Tumbunuma	77	88%	9%	0%	3%	12%	62%	21%	5%
El Quingue	39	97%	0%	0%	3%	64%	33%	0%	3%
El Aji	60	92%	8%	0%	0%	44%	52%	3%	0%
San Vicente 3	60	73%	23%	2%	2%	27%	53%	20%	0%
San Pablo 3	93	80%	18%	2%	1%	44%	34%	17%	4%
Campanacocha	60	93%	0%	0%	7%	30%	63%	0%	7%
TOTAL	633	88%	9%	0%	3%	37%	47%	12%	4%

generally positive ratings, with respondents rating them "good" 52 to 87 percent of the time. The SSC members surveyed were also quite favorable towards the treatment that they received (*Exhibit 3-27*). Ratings of "good" for this category ranged from a low of 73 percent in San Vicente to 97 percent in El Quingue, and were 88 percent overall. Respondents also rated the abilities of clinical staff quite highly (not shown in the tables).

The poorest ratings were given in regards to the availability of medicines at the SSC clinics. Overall, 59 percent of respondents rated drug availability fair to poor. The highest ratings in this category were in El Quingue and Lactahurco, where 64 percent and 56 percent of respondents, respectively, gave a rating of "good". The poorest ratings were in Tumbunuma, where only 12 percent gave a "good" rating, Uzhar (25%), and San Vicente (27%). The availability of medical equipment (not shown in the exhibits) was also rated fair to poor by a substantial portion of respondents in several of the survey sites.

The perception of poor drug availability can be compared to actual data obtained as part of the survey. As one measure of drug availability, SSC members in the survey were asked whether they needed medications during their last visit to the SSC clinic, and if so, whether the SSC was able to supply them. *Exhibit 3-28* shows that between 75 percent and 97 percent of respondents requiring drugs in eight of the nine survey sites claimed that they received them at the SSC clinics. The poorest reported performance was in San Pablo, where 58 percent of respondents said that they were able to obtain the required medication at the SSC, while 42 percent had to go to a private pharmacy. The accuracy of these data is in doubt, however, given that they rely on recall and that the last SSC clinic visit of some respondents could have been several months ago or more. In addition, it may be that in some cases, the physician does not prescribe needed medicines that he knows are not available at the clinic or substitutes a drug that is available but less appropriate than the drug that he should be prescribing (such as giving aspirin instead of an antibiotic). These percentages also seem too high when compared to the ratings that respondents gave concerning drug availability.

The facilities survey carried out an inventory of the medicines used most at each clinic. None of the nine clinics surveyed came close to having the 71 medicines on the SSC essential drug list that all clinics are supposed to have in stock. The clinic in El Quingue was completely out of all of the drugs that it dispenses the most often, while the San Vicente and Tumbunuma clinics had one only of its most used drugs in stock. Four of the nine clinics (Tumbunuma, El Quingue, San Vicente, and Campanacocha) had no stocks of the anti-parasitic drugs that they most frequently prescribe, and the San Vicente and El Quingue clinics appeared to have no antibiotics in stock. The clinics in Lactahurco and El Aji seemed to be better supplied than the others at the time of the survey. These data indicate a serious drug supply problem at the clinics surveyed and correspond to the respondents' generally negative ratings regarding drug availability.

Respondents who were not members of the SSC were also asked to rate the services of the health facilities that they use. The results show that they rated the quality of care at MSP centers and subcenters at about the same level as SSC members rated the quality of SSC facilities. However, non-members gave somewhat higher ratings for the quality of care received at general hospitals and at private clinics.

In summary, SSC members interviewed consider the cost savings on drugs, medical consultations and travel, plus the convenient distance of the clinics to be the major advantages of the SSC system. They expressed in general a high regard for the health professionals and the treatment that receive in the clinics, and view as the greatest problems the lack of adequate drug supplies and equipment, and the fact that the health professionals (i.e. physicians and dentists) are only available at each clinic on a part-time basis.

Exhibit 3–28: Where SSC Members Obtained Medicines: Percentage of SSC Members Surveyed Who Required Medicine during their Last Visit to an SSC Clinic by the Source of Medicine				
Clinic Site	No. Needing Medicine	PROPORTION OF THOSE REQUIRING MEDICINE WHO OBTAINED THEM FROM:		
		SSC Clinic	Pharmacy	MSP Clinic/ Other
Llactahurco	81	85%	9%	6%
San Antonio de Alao	67	97%	3%	0%
Uzhar	53	81%	17%	2%
Tumbunuma	66	88%	11%	2%
El Quingue	38	97%	3%	0%
El Aji	60	85%	12%	3%
San Vicente 3	57	75%	25%	0%
San Pablo 3	83	58%	42%	0%
Campanacocha	54	89%	7%	4%

Exhibit 3–29: Would Non–Members Consider Joining the SSC?: Responses of Former Members and Those Never Enrolled						
Clinic Site	Yes		No		Total	
	No.	%	No.	%	No.	%
Llactahurco	9	29%	22	71%	31	100%
San Antonio de Alao	31	70%	13	30%	44	100%
Uzhar	41	54%	35	46%	76	100%
Tumbunuma	12	80%	3	20%	15	100%
El Quingue	22	54%	19	46%	41	100%
El Aji	63	90%	7	10%	70	100%
San Vicente 3	50	71%	20	29%	70	100%
San Pablo 3	18	56%	14	44%	32	100%
Campanacocha	4	100%	0	0%	4	100%
TOTAL	250	65%	133	35%	383	100%

3.6 THE FUTURE: CAN UTILIZATION AND COVERAGE OF THE SSC INCREASE, AND IF SO, WHAT CHANGES NEED TO BE MADE?

Two of the major goals of the SSC are to increase utilization among households belonging to the SSC, and to expand coverage of the program among the rural population. In this section, we discuss the willingness of non-members to join the system, the willingness of SSC members to pay for improvements to the system, and the improvements SSC clients and staff felt would be needed to both increase utilization of services and attract new members.

3.6.1 Willingness of Non-Members to Join the SSC

As shown in *Exhibit 3-29*, the majority of non-members interviewed -- 65 percent -- said that they would consider joining the system. These respondents include both those who were formerly enrolled in the SSC and those who never joined. Non-members from the Llactahurco site were most resistant to joining, with only 29 percent willing to consider membership. On the other hand, 90 percent of non-members surveyed in the El Aji area would consider joining the SSC. A lack of knowledge about the SSC was frequently given as a response to why non-members would not be interested in enrolling, especially in Uzhar. When asked what changes would be needed before non-members would enroll (or in the case of former members, reenlist), the overwhelming response was for an increase in the time that professional care is provided, and an overall increase in services. The next most frequent response concerned the need to increase the availability of medicines.

3.6.2 Willingness of Members to Pay an Additional Contribution for Quality and Other Improvements

At the time of the survey, SSC members were paying 660 sucres per month as a contribution to the SSC¹³. This was then the equivalent of approximately US\$0.33. When asked if they would be willing to pay an additional contribution for improvements in health services, more than three-quarters (77%) of all those surveyed said that they would. All respondents in San Vicente indicated a willingness to pay more, compared to 68 to 70 percent of those in Campanacocha, Llactahurco, and San Antonio de Alao. *Exhibit 3-30* shows the responses to this question and the amount respondents are willing to pay each month. Sixty-three percent of those willing to pay more, and 48 percent of the entire sample indicated that they would pay only 1,000 sucres (around \$0.49) or less per month as a contribution. However, 13 percent of the sample indicated a willingness to pay more than 1,000 sucres up to 2,000, and 10 percent said they are willing to pay more than 2,000 sucres (around \$0.98), which is three times the current monthly contribution. As could be expected, fewer people in the poorer areas, such as Llactahurco, Campanacocha, San Antonio de Alao, and El Aji, expressed a willingness to pay more than 1,000 sucres per month (7-10% of respondents) than in the wealthier areas near the coast, such as El Quingue and San Pablo, where 51 and 44 percent of SSC respondents, respectively, claimed to be willing to pay more than 1,000 sucres per month.

¹³ In December 1994, the monthly contribution increased to 750 sucres, in conjunction with the increase in the monthly minimum wage to 75,000.

Exhibit 3–30: Willingness of SSC Members to Pay a Greater Monthly Contribution for Improved Services: Percent of Responses from SSC Members (in Ecuadoran sucres) *

Clinic Site	N	AMOUNT WILLING TO PAY PER MONTH (PERCENT OF RESPONDENTS):							TOTAL
		No More	Less than 800 s.	800 – 1,000 s.	More than 1,000 s. up to 2,000 s.	More than 2,000 s. up to 5,000 s.	More than 5,000 s.	Don't know/ Other	
Lactahurco	90	30%	31%	30%	2%	2%	3%	1%	100%
San Antonio de Alao	** 82	30%	38%	23%	4%	5%	0%	0%	100%
Uzhar	64	23%	6%	27%	27%	13%	2%	3%	100%
Tumbunuma	77	8%	9%	58%	6%	13%	1%	4%	100%
El Quingue	39	26%	8%	0%	23%	28%	0%	15%	100%
El Aji	61	31%	5%	52%	8%	2%	0%	2%	100%
San Vicente 3	60	0%	2%	58%	27%	3%	2%	8%	100%
San Pablo 3	93	27%	1%	16%	25%	13%	6%	12%	100%
Campanacocha	** 50	32%	20%	36%	4%	4%	0%	4%	100%
TOTAL	616	23%	14%	34%	13%	8%	2%	5%	99%

* The exchange rate at the time of the survey was approximately 2,045 sucres per \$US. 1,000 sucres was therefore the equivalent of around \$0.49.

** Does not include missing responses (8 for San Antonio de Alao, and 10 for Campanacocha).

When the data on willingness to pay are examined by the household income of the respondents, about equal proportions of respondents in each major income group, including those earning less than the minimum living wage of 66,000 sucres per month, said that they were willing to pay an additional contribution for improvements to the SSC -- between 76 and 80 percent in each group. As could be expected, the *amount* people are willing to pay increases with income. *Graph 3-2* shows the proportion of respondents who expressed a willingness to pay a contribution of more than 1,000 sucres per month. Whereas nearly 15 percent of those earning less than the minimum wage said they would pay more than 1,000 sucres per month, around one-third of those in the higher income categories (100,000 sucres to 200,000 sucres, and 200,000 sucres or above) were willing to pay more than this amount. Thirteen to 19 percent of those in these higher income brackets said that they were willing to contribute more than 2,000 sucres per month. However, since the SSC tends to attract the poorer segments of the rural population, with 44 percent of members in the survey earning 100,000 sucres or less per month (see *Section 3.4.1*), the potential for most members being willing to pay a significantly greater contribution for improved services appears to be quite limited.

Nonetheless, it should be noted that there is evidence to suggest from surveys conducted in other countries that respondents asked questions concerning willingness to pay tend to cite amounts that are in fact less than they are willing to pay, since they fear that their answers will be used to determine new fee levels. Thus, these expressed preferences may somewhat underestimate the amount SSC members are willing to pay for improved services. Furthermore, although the additional amounts that most respondents say they are willing to pay seem relatively small (e.g. 200-300 sucres per month), these funds could have some impact on the quality of services, if they are used specifically to improve the drug supplies or for other quality improvements (see *Sections 4.0 and 5.0* on the cost estimates and quality improvements).

3.6.3 Improvements that Need to be Made According to Respondents and SSC Staff Members

SSC members in the household survey indicated that the improvements that they would be most willing to pay an additional contribution for are: better drug supplies (34% overall of all responses given), more clinical care hours (26%), more and better doctors (17%), and better services in general (16%) (see *Exhibit 3-31*). Having clinics closer to home seems to be less of a concern, accounting for only six percent of responses in all, although it was mentioned most often by residents in the San Pablo and Tumbunuma survey sites (11% and 9%).

The focus group discussions that took place with local leaders and community residents at each of the nine survey sites provided more information on the major and underlying problems with the SSC system and yielded some of the more interesting and enlightening suggestions for improving it. Community members in San Vicente viewed many of the problems within the SSC as part of a deeper problem concerning the lack of political power among the peasant population. The fact that the government owes the SSC many millions of sucres is seen as a manifestation of its lack of concern for the rural population and the peasants' lack of power. One of their recommendations was to have peasant representation on the Upper Council of the IESS to express the needs and demands of those the SSC is supposed to serve.

Graph 3-2. Proportion of SSC respondents Willing to Pay a Contribution of more than 1,000 Sucres per month for Quality Improvements by Income Group

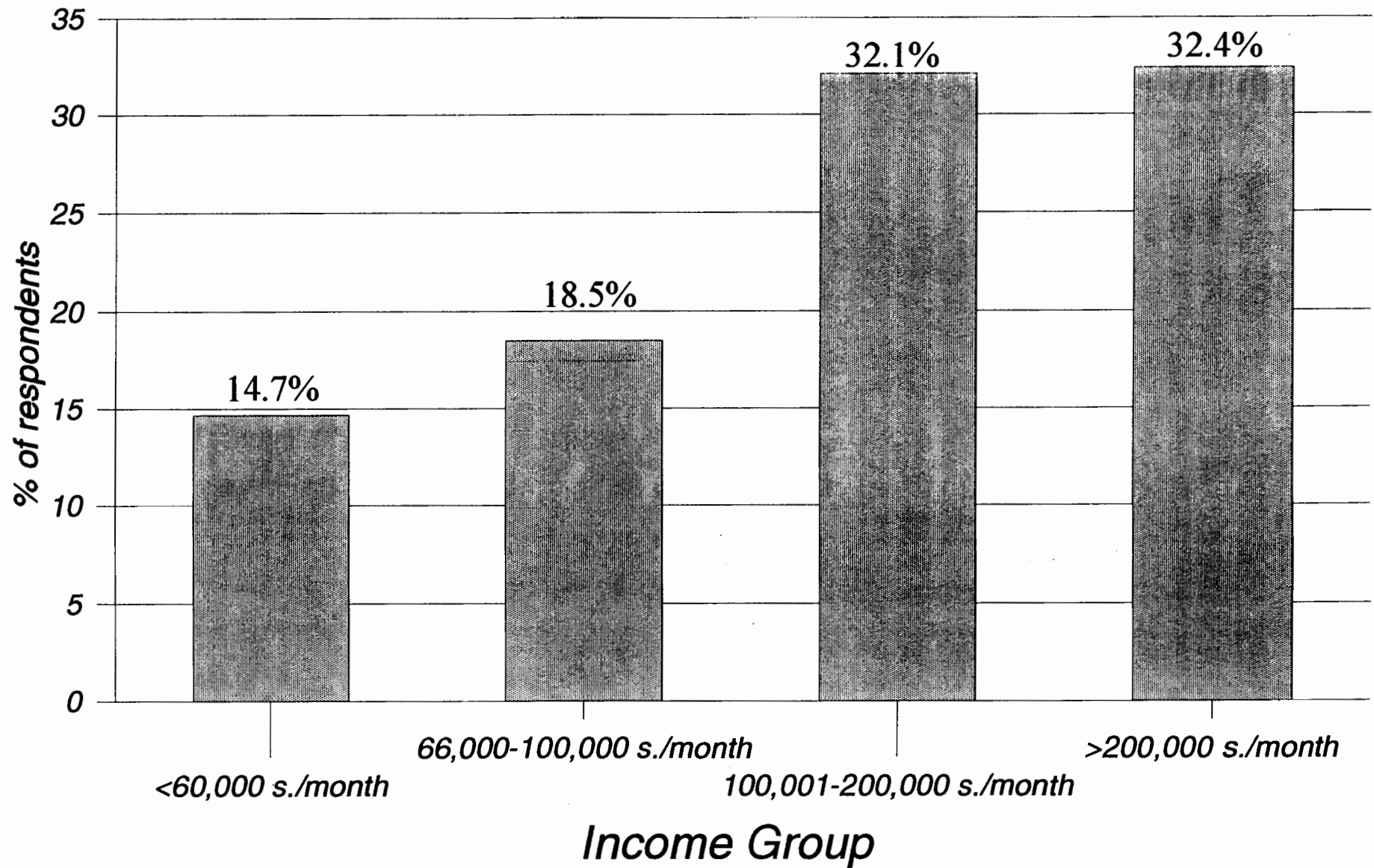


Exhibit 3-31: How SSC Members Define "Better Services" for which They Would be Willing to Pay a Higher Monthly Contribution

Clinic Site	NUMBER OF RESPONSES GIVEN*:													
	Better Supply of Medicines		More Service Hours		More and Better Doctors		Clinics Closer to Home		Better Services		Other		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Llactahurco	55	38%	31	21%	24	17%	12	8%	21	14%	2	1%	145	100%
San Antonio de Alao	50	36%	30	22%	28	20%	6	4%	19	14%	4	3%	137	100%
Uzhar	41	34%	36	30%	20	17%	5	4%	17	14%	0	0%	119	100%
Tumbunuma	63	34%	42	23%	25	14%	16	9%	39	21%	0	0%	185	100%
El Quingue	24	41%	14	24%	10	17%	1	2%	9	15%	1	2%	59	100%
El Aji	41	32%	42	33%	24	19%	6	5%	15	12%	0	0%	128	100%
San Vicente 3	52	30%	58	33%	26	15%	7	4%	33	19%	0	0%	176	100%
San Pablo 3	54	30%	39	22%	36	20%	20	11%	29	16%	0	0%	178	100%
Campanacocha	28	33%	18	21%	12	14%	0	0%	16	19%	12	14%	86	100%
TOTAL	408	34%	310	26%	205	17%	73	6%	198	16%	19	2%	1,213	100%

* A total of all three responses that respondents gave.

Many of the clinic staff had a number of suggestions for improving productivity and the overall quality of service delivery. These included: having all doctors work full-time in each clinic, instead of each being responsible for two clinics; greatly improving the drug supply system; providing more technical training for clinical staff; making greater efforts to recruit more members, which will be more feasible once these quality improvements are made; and drastically cutting the amount of paper work ("red tape") that the clinical staff are burdened with. Several staff members saw a need to significantly improve the IESS's supervision system. One recommendation was to have supervisors based at the provincial level, instead of at the central or regional level. This would enable them to visit more frequently so that they would be more aware of the particular problems and needs of each area. Another physician recommended that health specialists visit each clinic periodically to provide better follow-up and preventive care and to conduct community assessments.

3.7 SUMMARY AND CONCLUSIONS

- ▲ Clinic Staffing: Only four of the nine clinics participating in the survey had a physician for all of 1993. Four other clinics were without a physician for six to seven months of the year, and two clinics had neither a physician or a nurse auxiliary for two or three months of 1993. By the end of the year and up to the time of the survey, all nine clinics were staffed by a full-time nurse auxiliary and a part-time physician, who works 12 to 18 hours in the clinic per week, splitting his or her time between two clinics (with the exception of the busy San Pablo clinic where the physician worked nearly full-time). Most dentists in the clinics surveyed rotate between clinics every two months or so, and thus no dental services are available at most of these clinics for 10 months out of the year. Two clinics had no dentist for all of 1993. The lack of full-time professional staff in the clinics is a major concern of SSC members interviewed and one reason that they give for seeking care from non-SSC providers.
- ▲ Types of Health Services Provided: Although most of the diseases that predominate in the areas served by the clinics are preventable, the SSC facilities in the survey focus primarily on treating illnesses, as opposed to providing preventive care. Curative care visits accounted for 70 to 95 percent of all visits to physicians, and 86 to 98 percent of those to nurse auxiliaries in 1993. The clinics surveyed do not offer immunizations on a routine basis, with a few participating instead in mass vaccination campaigns run by the government on a periodic basis. This implies that there are many missed opportunities for immunizing children coming to clinics for the treatment of illnesses. Both clinic records and household recall data suggest that few women receive family planning services from SSC clinics.
- ▲ Deliveries: Very few women delivered babies at the SSC clinics in 1993, reportedly due to the limited hours the clinics are open (e.g. no overnight care), the lack of adequate facilities and medicines for childbirth, and the preference among some, especially in the predominantly Indian areas, for the use of traditional midwives.
- ▲ Community Outreach Services: All SSC facilities in the survey provide limited outreach services to participating communities, which focus largely on preventive health measures,

including health education activities, and participation in sanitation and community development projects. The amount of time clinics devote to community outreach, according to clinic records, was on average around eight hours per week in 1993, with three clinics providing community-based services between 11 and 15 hours per week. Most of the outreach is provided by the nurse auxiliaries. The extent and adequacy of coverage of outreach services to all communities served by the SSC clinics in the survey areas could not be assessed during this study.

- ▲ Referrals: Clinic records indicate that an average of one in nineteen visits to the physician (5.3%) are referred to more sophisticated IESS facilities. The household survey suggests a larger rate of referrals by both physicians and nurse auxiliaries of one in nine clinic visits on average (11%), which is considered quite high. More research is needed on the number of referrals and referral patterns.
- ▲ Use of Staff Time and Productivity: In 1993, the physicians and nurse auxiliaries spent, on average, less than 60 percent of their recorded time seeing patients in the clinic or conducting outreach activities in the communities. The remaining 40 percent of so of their time was mainly unaccounted for or spent performing administrative duties (especially in the case of the nurse auxiliaries). Low patient volume may be one reason for the relatively low percentage of time spent on patient care in several of the clinics. When clinic staff do see patients, however, the physicians in the surveyed clinics used their time efficiently, seeing on average between 3.5 and 4.5 patients per hour.
- ▲ Training and Supervision: These support services, which are essential to maintain high quality health services, appear to be extremely inadequate at the nine clinics surveyed. Physicians of the nine clinics received on average only 18 hours of in-service training in all of 1993, and the appropriateness of this training, which focused on in-patient care in urban hospitals, can be questioned, since SSC staff deal almost entirely with rural populations on an out-patient basis. Five out of the nine physicians received no supervisory visits in the year preceding the survey, and those that did felt they were of limited use. The quantity and quality of supervision for the nurse auxiliaries appears to be somewhat better, although most had only received one or two visits over the period of one year.
- ▲ User Fees: Despite the official policy of providing free services to SSC members, the recall data from the household survey suggest that the SSC clinics surveyed are charging a minority of SSC member patients (6% to 12%) for drugs, consultations, or both. Some clinics (i.e. San Pablo) are charging user fees more consistently than others. Non-members are apparently being charged at a considerably higher rate or more frequently. Around 80 percent of the fees respondents reported paying were for the purchase of drugs at the SSC clinics. More research is needed into the fee levels, the policies of clinics concerning which patients and types of conditions or procedures are charged, and what happens to the recovered funds.
- ▲ SSC Population Coverage: Four of the nine sample sites had less than the minimum target of 300 affiliate households, with two having less than 200. The low number of

member households in two of these cases was due to low membership rates (around 50%) while in the other two cases, it was due to the small number of total households in the catchment area of the clinics. On average 60 percent of households at the nine sites were enrolled in the SSC, with enrollment rates ranging from around 40 to 80 percent. These data indicate a potential to increase enrollment significantly in many places. The study also found that households belonging to the SSC tended to be poorer than non-member households, and thus, the system is serving its target population of low-income peasants.

- ▲ Clinic Utilization Levels: According to clinical records, utilization levels of the nine SSC clinics surveyed were quite low in 1993. During the days that they were present in the clinics, physicians at the nine clinics saw on average less than 10 patients per day, and nurse auxiliaries saw less than eight patients per day. Six of the nine clinics, mainly those in the mountain region and the Amazon, recorded only five to eight physician consultations per day. The three most utilized clinics, all located in the more densely populated coastal region, recorded 10 to 22 physician consultations per day. On average, SSC members (individuals) made 1.6 visits to an SSC clinic in 1993, with a range of 0.9 to 3.5 visits. The largest factor affecting daily patient volume appears to be the number of SSC member households served by the clinic, although the rate of clinic visits per individual member is also a factor. These findings suggest that one of the reasons many clinics are under-utilized is that they serve too few families, which is due to either low SSC enrollment rates; the small number of households in the clinic catchment areas or both. The part-time schedule of the professional staff (i.e. physicians and dentists) and the lack of sufficient drug supplies are also possible contributing factors to the low utilization of SSC services.
- ▲ Reliance on SSC Services: Despite the low utilization levels recorded by the clinics, recall data from the household survey indicates a relatively heavy reliance on the SSC facilities by SSC members for curative care. More than 60 percent of SSC household members reporting illnesses over a two-month period sought care at the SSC clinic, which compares favorably with similar data from other developing countries. It is possible, however, that respondents tended to recall mainly more severe episodes of illness. Those who go elsewhere mainly utilize MSP facilities, and very few go to private clinics. The main reasons given for seeking services from non-SSC providers are the fact that these services are better (and presumably available more frequently) and are closer to their homes. The recall data also indicate that members of SSC-affiliated households were more likely to seek health care for an illness than those from non-affiliated households (80 percent vs. 66 percent). This suggests that SSC members are receiving more health care -- at least curative care -- than non-members.
- ▲ Distance/Travel Time: The household survey results seem to indicate that SSC services are being used predominantly by residents of communities nearest the clinics. This implies that affiliates will only travel so far to seek care at SSC clinics, especially given the limited availability of professional staff (i.e. physicians and dentists) and medicines at the clinics. This finding suggests that it may be difficult to significantly increase utilization among residents of outlying areas without making considerable improvements

to existing services or without building more clinics.

- ▲ Perceived Advantages of SSC Services: According to SSC members, the most positive aspects of SSC health services are their convenient location, which can save substantial travel costs, and the fact that clinic visits and medicines are free of charge for most patients. The vast majority of respondents were also generally favorable towards the SSC health professionals and the quality of the medical care that they received.
- ▲ Perceived Problems with SSC Services: The major problems with SSC services perceived by members in the nine survey sites are the lack of adequate supplies of medicines, the fact that professional health care (i.e. physician and dentist care) is available only on a part-time basis, and that, for these reasons, the facilities are often not able to handle medical emergencies. A quick inventory of essential drugs carried out at the nine clinics during the survey, as well as interviews with clinic staff confirms that stock-outs appear to be common, and that the SSC system has a serious drug supply problem.
- ▲ Willingness to Join the SSC and Willingness to Pay for Quality Improvements: The potential for increasing the utilization of SSC services and expanding their coverage among the rural population seems to exist, as indicated by the expressed willingness of the majority of non-members surveyed (65%) to consider joining the system, and the willingness of the vast majority (80%) of current members to pay a larger monthly contribution if services are substantially improved. The amount most members are willing to pay in dues (1,000 sucres per month or less) is still relatively small, although, if the additional amount in dues is used specifically to improve drug supplies or other aspects of quality, it could have an important impact on the quality of care, and thus on utilization of the clinics. The improvements that would propel members to pay larger contributions and non-members to join are primarily an improvement in the supply of medicines, and an increase in the availability of professional medical care, by, for example, extending clinic hours and having doctors and dentists assigned to one clinic on a full-time basis.

4.0 ANALYSIS OF THE DEMAND FOR HEALTH CARE AT SSC CLINICS

4.1 INTRODUCTION

This portion of the study presents an overview of the results of an analysis of the demand for health care services among the rural population in Ecuador. A full report which describes the demand analysis in considerably more depth is available as a separate document¹⁴. The aim of the demand study is to assist the SSC to better understand why current levels of utilization of SSC health services are low and have been declining over time. This analysis utilizes the household survey data and data from the facilities survey on inputs and services to identify the factors that determine the demand for health care services, the choice of provider among both the insured and uninsured, and the decision to join the SSC.

This analysis focuses on the demand for curative care at SSC clinics, which currently accounts for approximately 80 percent of SSC services provided. Although some SSC non-members receive care at SSC clinics, most SSC services are consumed by SSC members. Accordingly, the proportion of the population who are affiliated with SSC is an important determinant of the level of utilization experienced by SSC clinics. More generally, the rate of utilization of SSC facilities is determined by the following factors:

- ▲ the proportion of the population who are affiliated with the SSC
- ▲ the proportion of the population who become ill
- ▲ the proportion of the ill persons -- both SSC-affiliated and non-affiliated -- who seek care outside the home
- ▲ the proportion of those seeking care who select an SSC facility as their provider.

Both the decision to seek care outside the home and the choice of an SSC facility as provider are closely related to SSC affiliation. SSC affiliation amounts to health insurance, significantly reducing the out-of-pocket costs to members of consuming health care provided by SSC facilities. SSC affiliation is expected, therefore, to increase both the overall rate of treatment for illnesses outside the home, and to increase the proportion of care received at SSC facilities. Accordingly, policies designed to increase the utilization of SSC facilities must do one or more of the following:

- ▲ increase the proportion of the population who are affiliated with the SSC.
- ▲ increase the proportion of the ill who seek care outside the home

¹⁴ See Knowles, James. 1995. "The Demand for Curative Health Care in Rural Ecuador", an HFS report submitted to USAID/Ecuador and the Policy and Sector Reform Division of USAID's Office of Health and Nutrition. (April).

- ▲ increase the proportion of those seeking care who select a SSC facility as their provider

The higher utilization rates of health care among SSC members, as compared to non-members, indicated by the recall data (see *Section 3.4.3.1*) suggests that an important policy option to expand the utilization of SSC dispensaries may be to increase the proportion of the rural population affiliated with the SSC. Economic theory suggests that one way to do this may be to lower SSC fees, including annual membership dues and out-of-pocket fees, that, as shown in *Section 3.3*, some SSC clinics are charging for consultations and drugs for some patients. However, charging lower fees to attract more members may entail a loss of revenue for the clinics (if indeed the collected funds are being used by the clinics to cover certain expenses), unless the increase in membership is so great that it offsets the negative effect on revenue of lower fees¹⁵. Reducing SSC fees is also likely to increase costs, due to higher utilization.

Alternatively, it may be possible to increase SSC membership by improving the quality of care provided at SSC dispensaries. Quality improvements should maintain or increase both utilization and revenue, but they are also likely to increase costs. The extent to which improving quality is an effective option for attaining SSC goals will depend on the responsiveness of the population (both members and non-members) to the quality improvements in relation to the cost of such improvements. A combination of price changes (e.g. a small increase in dues coupled with an official set of fees for drugs) to pay for quality improvements may be the most effective policy. The demand analysis is intended to evaluate these and other policy options available to the SSC to attain its policy objectives.

4.2 POLICY OPTIONS

Exhibit 4-1 lists six policy options available to the SSC and indicates their likely impact (+ = increase, - = decrease, ? = unknown) on three of the SSC's objectives: 1) to increase utilization of SSC facilities; 2) to expand SSC membership; and 3) to promote SSC financial sustainability (i.e., increase SSC net income).¹⁶ The likely effects of these six policy options on each of these three policy objectives are as follows:

- ▲ Reduce SSC dues. This policy should expand membership, thereby increasing the utilization of SSC facilities. Its effect on SSC revenues collected by the clinics is indeterminate. It will depend on the price elasticity of demand for SSC membership (that is, the percentage increase in membership resulting from a given percentage decrease in dues). The effect on SSC net income will depend on whether marginal revenue (which may even be negative) is higher than the marginal cost of treating additional members.
- ▲ Reduce out-of-pocket costs of utilization to SSC members. As discussed in *Section 3.3*, nearly all clinics participating in the survey appear to charge fees for either consultations and drugs or both for a minority of SSC member patients. Reducing these out-of-pocket costs should increase both utilization rates (i.e., visits per member household) and service

¹⁵ That is, in economics terms, the price elasticity of the demand for membership is greater than unity.

¹⁶ The present study could not address the fourth SSC objective, i.e., increasing the use of preventive care, due to inadequate data.

delivery costs. Its effect on SSC net income will depend both on marginal costs and on the degree to which utilization of SSC services are increased as a result of decreasing out-of-pocket costs. In addition, lower out-of-pocket costs to members should boost membership (with additional increases in utilization and costs), since the benefits of membership are a function of the difference between what members pay in comparison to what non-members pay for health care.

- ▲ Reduce out-of-pocket-costs to non-members. According to the data presented in *Section 3.3*, non-members are charged considerably higher fees for both consultations and drugs at SSC clinics. The effect of reducing these costs on utilization and on the net income of SSC clinics is indeterminate. Lower out-of-pocket costs to non-members should encourage greater utilization on the part of non-members, but it will also reduce the benefits of SSC membership. This could possibly reduce the number of SSC members and thus lead to offsetting reductions in utilization. The effect on net income is indeterminate but is likely to be negative. With costs increasing and revenue likely to decrease, the direction of the effect on SSC's net income is expected to be negative.
- ▲ Improve the quality of care in SSC facilities. Improving the quality of care in SSC facilities should increase their utilization by both members and non-members. In addition, better quality services should expand SSC membership, producing further increases in utilization (both directly and via the indirect effect of SSC membership on expected fees, i.e., the insurance effect of SSC membership on demand). The effect on SSC net income is indeterminate; it will depend on how the expected increases in revenue compare to the costs of quality improvements and to marginal service delivery costs.
- ▲ Using fee increases to pay for quality improvements. Quality improvements can be paid for by raising either membership dues or user fees (for consultations or drugs). The net effect on utilization and membership will depend on the relative magnitudes of the price and quality elasticities of demand and membership (that is, the degree to which price increases negatively affect utilization and membership compared to the degree to which quality improvements positively effect utilization and membership). The effect of such a combined policy on SSC net income will depend on whether the net effect on membership and utilization is positive and on the marginal cost of supplying additional services.
- ▲ Increase the referral rate. It has been said that an important motive that rural households have for joining SSC is to gain access to IESS facilities through referrals. If this is true, increasing the proportion of patients referred to IESS facilities should increase both the membership and utilization of SSC services. The effect on SSC net income is indeterminate but will depend on the degree to which membership rises with increases in the referral rate, as well as the cost to the SSC per patient referred.

EXHIBIT 4-1 EXPECTED IMPACT OF POSSIBLE POLICY CHANGES ON SSC UTILIZATION, MEMBERSHIP, COSTS AND REVENUE			
Policy	Utilization of SSC facilities	SSC Membership	SSC Financial Susta- inability (net income)
Reduce SSC mem- bership dues	+	+	?
Reduce out-of- pocket fees charged to SSC members	+	+	?
Reduce out-of- pocket fees charged to SSC non-members	?	-	-
Improve the quality of SSC services	+	+	?
Improve the quality of SSC services while simulta- neously raising fees to cover the full cost of the quality improve- ments	?	?	?
Increase the referral rate	+	+	-

The demand analysis constitutes an empirical study of the relationships depicted in *Exhibit 4-1*. Specifically, it attempts to:

- 1) test for the expected positive or negative effects suggested by economic theory;
- 2) establish the existence of positive or negative effects in cases where theory alone is ambiguous concerning the expected direction of impact; and
- 3) provide at least tentative quantitative estimates of the magnitude of these effects.

4.3 METHODOLOGY

The study works with three empirical models. These are:

- 1) A logit (yes/no) analysis of the decision to seek health care away from home when ill. This analysis involves two choices only: the decision to seek care, and the decision not to seek care;
- 2) A discrete choice model explaining the choice of provider when ill. This analysis involves five choices: 1) seek care at an SSC dispensary; 2) seek care at an MSP health center or subcenter; 3) seek care at a hospital; 4) seek care at a private clinic; or 5) seek no care or be treated at home;
- 3) An logit (yes/no) analysis of the decision to join the SSC.

The demand analysis estimates the effect of a number of variables on demand. These variables include both those that can be most easily manipulated by policy changes (such as quality of care and out-of-pocket costs), as well as a number of demographic variables. These variables include:

- ▲ SSC membership status;
- ▲ perceived quality of care of services;
- ▲ out-of-pocket costs to patients for health care;
- ▲ the distance and expected travel time from home to health facilities;
- ▲ the rate of referrals to more sophisticated facilities;
- ▲ attendance by individuals at promotional or educational meetings on SSC services;
- ▲ the length and severity of the illness;
- ▲ household income;
- ▲ educational level of the household head;
- ▲ gender of the ill person;
- ▲ race and ethnicity; and
- ▲ major occupation of the household.

The logit model of the decision to seek care away from home is simpler than the discrete choice model on choice of provider, and provides a fairly clear understanding of the factors determining the utilization of SSC services by its members. However, even for SSC members, it fails to register the effects of possible substitution across providers, as a possible response to changes in price and quality. For example, a reduction of 10 percent in out-of-pocket fees charged by the SSC to members for services (e.g. consultations or drugs) may increase the probability of seeking care outside the home by five percent (implying a price elasticity of 0.5). However, it might also hypothetically produce an equivalent increase in SSC utilization if SSC members switch from other providers to SSC dispensaries (implying a total price elasticity equal to one). The logit (yes/no) model would fail to register the second of these effects, whereas the discrete choice model would, in principle, register it correctly.

All three models used in the demand analysis are estimated using data from the household survey conducted in the nine selected clinic sites, as well as data on inputs and services collected during the facilities survey. The two data sets have several attractive features for a demand analysis. These include:

- 1) the availability of quality assessments for preferred health providers;
- 2) information on the type, duration, and severity of illness;
- 3) strong representation within the sample of households having insurance (i.e., SSC members); and
- 4) data on input costs related to quality improvements.

At the same time, the household survey, in particular, has a number of important limitations. These are:

- 1) the number of sample clusters is relatively small, reducing the degree of precision associated with the estimates;
- 2) the expected price, distance (or time), and quality of care measures needed to be estimated for providers other than the preferred provider (i.e., the nearest SSC dispensary for SSC members, or, in the case of non-members, the provider respondents identified as the one they "generally visited"); and
- 3) there was only limited information collected on the individual characteristics of those reported to have been ill (e.g., information on education was collected only for the head of the household).

To analyze the effect of quality of care on demand, a quality of care index was developed, based on respondents' ratings of six characteristics of health care services. These aspects of quality are: waiting time, convenience of hours, availability of drugs, availability of medical equipment, quality of treatment, and the competency of medical staff. Each of these separate measures of quality was also analyzed separately for some of the analyses. In addition, facility-level data on drug and physician labor inputs were used to construct quality measures.

Additional information on the methodology used in this analysis can be found in the separate document on the demand study (Knowles, 1995).

4.4 FINDINGS

Below we discuss the major results of the demand analysis, using the three models described above.

4.4.1 General Findings

- ▲ The out-of-pocket costs for health care of SSC members are only about one-third those of non-members. These costs include consultation fees and drug charges. Approximately 80 percent of out-of-pocket health care expenditures by both SSC members and non-members go to purchasing medications.
- ▲ Respondents rated the quality of care at SSC clinics about even with that at public health center/subcenters and somewhat lower than that at private clinics and general hospitals.

4.4.2 Findings on the Specific Factors Affecting the Demand for SSC Services

- ▲ SSC Membership Status: There was a strong positive relationship between SSC affiliation and both the decision to seek care and the decision to choose an SSC provider. This finding suggests that expanding SSC membership would be an effective means of increasing utilization of SSC facilities, at least for curative care services. It is consistent with a large body of health economics research which shows that insurance has a positive effect on levels of health care utilization.
- ▲ Perceived Quality of Care: Perceived quality of care, as measured using the quality of care index, was positively and significantly related to the probability of selecting a given provider (with a high estimated elasticity at the sample mean of 1.355). SSC membership is also positively and significantly related to the perceived quality of care in SSC clinics (with an estimated elasticity of 0.939). These relatively strong results suggest that improving the quality of care in SSC clinics would be an effective way to increase both SSC membership and the utilization of SSC services among current members. The estimated effect of perceived quality of care on the decision to seek care outside the home was much weaker but still positive for SSC members. The aspects of quality most affecting the decision to seek care were the availability of drugs, the clinic's consumption of drugs and supplies per SSC member household, and the number of hours of work by the physicians.
- ▲ Expected Out-of-Pocket Fees: As expected, the analyses show that higher fees and other costs to consumers tend to discourage utilization. However, the estimated effect of out-of-pocket payments for consultations and drugs on both the decision among SSC members to seek care outside the home and the probability of selecting a particular health provider, although negative and statistically significant, was found to be rather small (with an estimated elasticity at the sample mean of -0.079). These results suggest that a policy of decreasing out-of-pocket costs to SSC members would do little to increase utilization and would result in reduced revenue. Conversely, they indicate that raising fees would have little negative impact on utilization and might be an effective way to promote financial sustainability or to pay for quality improvements.

- ▲ Household Income: Surprisingly, no significant relationship was found between income and the decision to seek care outside the home. However, household income did appear to affect both the decision to join the SSC and the choice of provider. Income was found to be negatively and significantly related to SSC membership, that is, the lower the household income, the more likely the household belonged to the SSC. The analysis also found that, for the sample as a whole, the higher the income, the less likely an individual would choose to go to an SSC facility. Higher income SSC members were also more likely to seek services from a private provider. These results suggest that SSC services are viewed as a low-cost, low-quality form of health care.
- ▲ Level of Annual SSC Membership Dues: Although the level of annual dues is supposed to be the same throughout the country, the amounts reported by respondents in the household survey varied considerably by clinic. This may be due mainly to respondents misunderstanding the question. The level of annual dues was not found to be significantly related to the probability of SSC membership¹⁷. This result would appear to be counter to expectations, especially given the results discussed above showing that poorer households were more likely to belong to the SSC than wealthier ones. However, it may be that some or all of the reported dues are paid by employees or other third parties.
- ▲ Distance and Expected Travel Time to a Health Facility: Neither distance nor expected travel time were significantly related to the decision to seek care outside of the home, although expected out-of-pocket travel expenses had a negative impact on the decision to seek care. Distance and travel time were found to be positively related to the *choice* of provider, that is, the closer, the more likely a household would chose to seek treatment there. This finding is not surprising, however, given the number of household survey respondents who indicated a preference for providers on the basis of their proximity to their home. No significant relationship was found, however, between travel time and distance and the likelihood of a household being affiliated with the SSC.
- ▲ Referral Rates: No significant relationship was found between the referral rate and the decision to seek care on the part of SSC members. However, the referral rate was positively and significantly related to the decision to join the SSC. This finding is consistent with the belief, mentioned above, that one reason households join the SSC is to gain access to IESS facilities through referrals.
- ▲ Severity and Duration of Illness: There was a strong positive relationship between the length and severity of illness and the decision to seek care, as one would expect. The longer and more severe the illness, the more likely the person would seek care from a modern provider versus a traditional practitioner.

¹⁷ Although the level of annual dues is supposed to be the same throughout the country (7,920 sucres per year of 660 sucres per month), the amounts reported by respondents in the household survey varied considerably by clinic. This variation may be due to mainly to respondents misunderstanding the question.

- ▲ Participation in SSC Promotional or Outreach Activities: Neither attendance at social promotion meetings or at presentations by SSC clinic staff on the services provided by SSC was significantly related to the decision to seek care by SSC members. There was, however, a strong positive relationship between a reported visit by the SSC doctor to the household during the preceding two months and the decision to seek care. However, it is not clear whether the house call preceded the visit to the clinic, or in fact, was a follow-up to the clinic visit, which, if the latter, would make this relationship devoid of policy implications.
- ▲ Educational Level: Education of the head of household (particularly secondary education) was positively and significantly related to the decision to seek care. This finding is consistent with similar studies in other settings. Interestingly, however, educational level was not found to be a significant factor affecting the *choice* of provider.
- ▲ Age and Gender: No consistent relationship was found between gender of the ill person and the likelihood of using health services. However, the results show some tendency for children of both sexes to receive care from relatively inexpensive providers, such as SSC clinics and public health centers and subcenters.
- ▲ Race and Ethnicity: The black population was significantly more likely to seek care than either Indian or mixed populations. At the same time, those who reported speaking a combination of Quechua and Spanish or only Quechua, as compared to those who reported speaking only Spanish, were significantly less likely to seek care outside the home. Blacks were also found to be less likely to join the SSC. However, it is noted that these ethnic and language groups were concentrated in a few clusters, so that these findings may be related more to factors concerning the specific clinics involved (e.g. their location) than to the race or ethnicity of the people using these clinics.
- ▲ Occupation: Households in which the head is working in agriculture are significantly more likely to be affiliated with SSC, even after adjusting for education and income.

4.5 POLICY IMPLICATIONS

These findings permit us to assess which of the policy options identified above in *Exhibit 4-1* are most likely to have a significant impact on membership, utilization, financial sustainability and other variables of interest to SSC leadership. The results of this analysis are summarized below in *Exhibit 4-2*.

In sum, the findings suggest that there may exist considerable potential to increase SSC membership and overall utilization by improving the quality of care, particularly by increasing the drug supply and the number of physician hours of service, and perhaps by increasing referrals. Further, the low sensitivity of demand for services to modest changes in patients' out-of-pocket expenses suggests that it may be possible to finance these quality improvements through a combination of increased dues and user fees.

The analysts utilized econometric analysis to estimate the demand response to increases in

referrals, to improvements in quality and to increases in fees. Increasing the referral rate to attract additional members would be expected to involve some trade-offs between these objectives. For example, increasing the referral rate from its sample mean of 5.1 percent to 8 percent (the highest observed value among the sample clinics) would increase clinic membership by almost 17 percent, which would in turn increase revenues per clinic by around 1.6 million sucres. However, because of the greater costs of treating patients at more sophisticated IESS facilities, such a policy would increase the costs per clinic by a greater amount (approximately 2.8 million sucres), thereby worsening the typical clinic's net income. Alternatively, if out-of-pocket fees to members were increased sufficiently to cover the estimated shortfall, utilization rates would decrease by an estimated one percent. Therefore, a policy of increasing the referral rate, paid for again by increasing user fees, would lead to increased membership, with no adverse impact on financial sustainability, but would produce a small decrease in utilization rates.

In another policy simulation, it was assumed that the SSC increased the quantity of drugs and the number of physician hours provided in SSC clinics from the sample mean to the level of the best supplied clinic to test how this would affect utilization and costs. The analysis showed that if the costs of the quality improvement were not passed on to patients, the probability of seeking modern care would rise from 0.81 to 0.93. The costs of making these improvements would be about 7,400 sucres per household. If these costs were passed on through user fees, the probability of seeking care would rise slightly less, from 0.81 to 0.90, because the positive effect of quality improvements on utilization is partially offset by the negative effect of price increases.

A similar policy simulation was conducted using the broader quality of care index and again raising consumer satisfaction from the sample mean to the highest rating achieved by one of the nine sample clinics -- an increase of 14 percent in the quality of care index. The analysis suggested that this quality improvement would yield approximately a 13 percent increase in the proportion of the population affiliated with SSC and an 18 percent increase in the probability of an ill SSC member selecting an SSC clinic for treatment. The compound effect of this improvement of quality on affiliation and member behavior would be to increase utilization by about 33 percent.

The costs of these quality improvements were estimated to be about 8,600 sucres (US\$4.20) per SSC member household. This represents a 167 percent increase in drug expenditures, but only about a 12.5 percent increase in the 69,000 sucre (US\$33.75) cost per household currently incurred by the clinics.¹⁸

Increasing user fees to cover these costs could be expected to decrease utilization by about five percent. However, because the quality improvements will increase utilization by an estimated 33 percent, the overall effect of user fees to pay for quality improvements would still be a 28 percent increase in utilization. Thus, with the assumed increase in quality (which is not necessarily the best level for SSC to seek), it should be possible to improve quality of care, cover the costs of those improvements through user fees, and substantially increase utilization. And, most important, the improved quality of care and the increased utilization should improve the population's health status.

¹⁸ The reader is reminded that central and regional administration costs are not included in this estimate. Had it been possible to include those costs, the estimated costs per household would be higher and the increase in costs for these qualitative improvements would represent a smaller percentage.

<p style="text-align: center;">EXHIBIT 4-2 CONCLUSIONS FROM THE DEMAND ANALYSIS WITH RESPECT TO THE IMPACT OF POLICY CHANGES ON SSC UTILIZATION, MEMBERSHIP, AND FINANCIAL SUSTAINABILITY</p>			
Policy	Utilization of SSC facilities	SSC Membership	SSC Financial Sustainability
Reduce SSC membership dues	Since no effect of dues on membership was found, no increase in utilization would be expected to occur.	The study did not find a significant relationship between SSC dues and the decision to join the SSC. However, this finding may reflect the possibility that dues are paid in some cases by employers and other third parties.	If the findings of the study are interpreted literally, reducing dues would lead to decreases in net income.
Reduce out-of-pocket costs of SSC services to members	The study found that reductions in out-of-pocket costs to members would have a significant but relatively small effect on utilization by SSC members (the estimated price elasticity was only -0.079).	The study did not find a significant relationship between out-of-pocket charges to members and the decision to join the SSC.	Revenues and net income would fall with lower out-of-pocket fees to members.
Reduce out-of-pocket costs of SSC services to non-members	The subsample of non-SSC members was too small to permit separate estimation of the effect of SSC fees on demand by non-members.	The study did not find any evidence that lower out-of-pocket fees charged to non-members would impact adversely on SSC membership, as was expected theoretically.	

<p style="text-align: center;">EXHIBIT 4-2 CONCLUSIONS FROM THE DEMAND ANALYSIS WITH RESPECT TO THE IMPACT OF POLICY CHANGES ON SSC UTILIZATION, MEMBERSHIP, AND FINANCIAL SUSTAINABILITY</p>			
Policy	Utilization of SSC facilities	SSC Membership	SSC Financial Sustainability
Improve the quality of SSC services	The study found strong evidence that quality improvements lead to increased utilization.	The study found strong evidence that quality improvements lead to increased SSC membership.	The study found that net income would decrease with quality improvements in the form of increased availability of drugs and supplies and increased hours of work by physicians because the cost of these quality improvements would be higher than the additional revenue they would be expected to produce.
Improve quality of care while simultaneously raising user fees to recover the full cost of the quality improvements	The study found that utilization rates would still increase in this case.	The study found that SSC membership would increase significantly as the result of this policy, due to the strong positive relationship between quality and SSC membership and due to the absence of any significant price effect on membership.	Net income would rise as the result of this policy.
Increase the referral rate in SSC dispensaries	Utilization would increase due to increased SSC membership. No effect on the utilization rate.	There is a strong positive relationship between the referral rate and SSC membership (estimated elasticity = 0.352).	Net income decreases because the cost of the additional referrals exceeds the additional revenue from the new members.

5.0 COST ANALYSIS

5.1 INTRODUCTION AND OBJECTIVES

This section utilizes data from the SSC central and regional offices as well as information collected at the clinic sites in order to learn more about the costs of services at the clinic level. The objectives of this financial analysis are to:

- ▲ Determine the recurrent and capital costs by clinic;
- ▲ Calculate the total and unit (e.g. per visit) costs of basic types of services (curative, preventive, dental) provided by each type of medical personnel;
- ▲ Compare total and unit costs of services across facilities and analyze cost differentials;
- ▲ Estimate the costs of expanding utilization and coverage of the SSC; and
- ▲ Calculate the costs of improving the quality of the current mix of major services to an "acceptable standard" in order to meet the health care needs of the SSC target population.

5.2 METHODOLOGY

The data utilized for this analysis are presented in *Annex 3*. They include the annual costs per clinic for personnel, drugs and supplies, and the estimated opportunity costs (current market value) of furniture, equipment, clinic buildings, and land.

The costs used in this analysis include only clinic-level costs; central and regional administrative and supervisory costs are *not* included in the cost estimates because of the analysts' low confidence in the data available¹⁹. These central and regional administrative costs deserve to be examined in more detail in future analyses, since estimates based on the albeit questionable data revealed that adding these central and regional costs could increase clinic-specific costs by as much as 60 percent. It is therefore important to keep in mind that the cost estimates presented in this report do not cover the entire costs of the SSC system. Even if these administrative costs had been added, however, the cost differentials among services and among clinics would not likely change significantly.

In order to obtain the costs of capital resources -- building, medical equipment, medical instruments, and office equipment --by clinic for the year 1993, it was necessary to allocate only the portion of the total value of these capital items that corresponds to a period of one year. The annualized value of these items was calculated using an annualization table, based on their current value, and the

¹⁹ The data collection team was unable to obtain satisfactory explanations as to the components of the central/regional administrative cost figures. In addition, it was unclear how to best allocate these costs across the sample clinics.

assumptions that a building has a useful life of 20 years, and furniture and equipment have a useful life of 10 years. An interest rate of 10 percent was also used to reflect the opportunity costs of capital to the SSC (Janowitz and Bratt 1994)²⁰. To be complete, the annualized cost of the land (its rental value) was calculated assuming a 10 percent interest rate and added to the cost of the building. The methodology employed is explained in more detail in *Annex 3*. For the two facilities operating in make-shift buildings, San Pablo 3 and Campanacocha, the value of their current buildings was imputed based on the lowest annualized value of the SSC buildings which were calculated.

To estimate each clinic's personnel costs, the salary cost of the physician for each clinic was calculated based on his/her annual salary and the total hours he or she worked at the sample clinic. As noted in *Section 3.2.1.3*, most physicians worked at more than one clinic throughout the year, and thus pro-rating of the physician's salary was necessary to determine the portion of his/her salary to be allocated to the clinic surveyed. The dentists' salaries were also pro-rated, as they worked an average of two months in any one clinic, with the exception of the dentist in San Pablo 3 who worked at the clinic for six months in 1993. Nurses worked full-time in a given clinic, so it was not necessary to pro-rate their salaries. All salaries include the estimated value of benefits, such as vacation, housing allowance, Christmas and year-end bonuses, which were provided by the SSC central office.

To determine the cost of services offered by the different types of medical personnel, the analysts allocated all non-personnel costs to the different services. Following the methodology in *Annex 3*, budget line items which could be allocated to staff according to their use (direct costs) were allocated accordingly. For example, all drug expenditures were allocated to the physician, all medical supplies were allocated to the nurse auxiliary, and all dental supplies were allocated to the dentist. Concerning indirect costs, which include the value of the clinic building and land, equipment and office supplies, those that could be allocated by their use were allocated accordingly. Thus, medical equipment costs were allocated to the physician, medical instruments costs were allocated to the nurse auxiliary, and dental equipment costs were allocated to the dentist. The remaining indirect costs -- office supplies, office furniture, and the clinic building -- were allocated across staff according to hours each of them worked. As the nurse auxiliary works proportionately more hours per year than either the physician or the dentist, the bulk of these common costs were allocated to her.

Costs were allocated to preventive, curative, and outreach services according to the amount of time staff in each clinic spent on each of these services.²¹ Thus, all costs associated with the physician (or nurse auxiliary), including both direct costs such as salary and indirect costs such as office supplies and the clinic building, were allocated to either preventive, curative or outreach services according to the percentage of the total time he or she spent seeing patients that was devoted to each of these three services. Thus, if 60 percent of the time a physician saw patients was spent on curative care, 60 percent of the office supply costs given to the physician were allocated to curative care. Similarly, activities not directly relating to patient care, such as administration, in-service training, and time not accounted for, were allocated to each of these three services according to the percentage of time the particular staff member spent providing each type of service. To continue the above example, 60 percent of the

²⁰ For combinations of useful life and interest rates, the annualization factor reflects the sum of average annual depreciation and the average opportunity costs of capital.

²¹ The total number of hours worked for physicians and nurse auxiliaries in 1993 are reported in *Exhibits 3-7 and 3-8*, respectively. See *Annex 3* for the total hours worked by the dentists in 1993.

physician's costs associated with administrative duties would be allocated to curative care. In this manner, the total costs of services were obtained in each clinic by type of medical personnel. To calculate the cost per visit of each basic type of service by type of medical personnel, the number of visits for each service was divided into the total costs. The study's findings cover both medical and dental services at each clinic.

As mentioned in *Section 2.0*, the nine clinics selected for the survey are not necessarily representative of SSC clinics throughout the country. This should be kept in mind when interpreting the cost data, especially the cost averages given in the tables and graphs. Thus, this analysis does not provide cost estimates of the "typical" SSC clinic. Nonetheless, it does provide very useful information on how and why the costs of health services differ among SSC clinics, and therefore, helps point to ways in which less cost-effective clinics can reduce their costs.

5.3 FINDINGS

5.3.1 Clinic-Level Costs by Budget Categories

Exhibit 5-1 shows the total costs and costs by major budget categories -- labor, drugs, medical and office supplies, and capital costs -- for the nine sample clinics in 1993. The total costs for the year ranged from less than 16,000,000 sucres (around \$US7,800) in Tumbunuma to nearly 33,000,000 sucres (\$US16,140) in San Pablo, with an average of around 23,000,000 sucres (US\$11,250)²².

The average cost breakdown of the clinics by budget category is given in *Graph 5-1*. On average, personnel costs made up the largest single category, accounting for 77 percent of total costs of the nine clinics in 1993. Drug purchases made up only five percent of total clinic costs on average, and supplies (medical and office) accounted for another two percent. These three items (labor, drugs, and supplies) constitute the recurrent costs of the clinics, which made up, on average, 84 percent of total costs. Capital costs, that is, the annualized value of buildings and equipment, made up the remaining 16 percent of clinic costs, on average, and was the second largest cost category. Labor expenditures accounted for an average of 91 percent of all recurrent expenditures, with drugs and supplies accounting for the remaining nine percent.

Exhibit 5-1 also presents a breakdown of costs by budget category for each of the nine sample clinics (see also *Graph 5-2*) and shows the large differences in both absolute terms and in percentages on how costs were incurred among clinics. There was more than a two-fold difference in **labor** costs between the clinic with the lowest labor costs -- Tumbunuma -- and that with the highest -- San Pablo. Some of this difference is due to the fact that the San Pablo physician worked three times as many hours as the physician in Tumbunuma (24 vs. 8 hours). Much of the differences in labor costs, as well as in total costs, is also due to the fact that several of the clinics in the survey, including the Tumbunuma clinic, did not have a physician present for all of 1993, while others, including San Pablo, had a physician throughout the year. In fact, as shown in the last column of *Exhibit 5-1*, only four clinics had a physician for the full twelve months of 1993, and at four other clinics, there was a physician for only

²² For the cost analyses, the exchange rate of 2,045 sucres = \$US1.00 is used, which is the average exchange rate for 1993.

Graph 5-1: Average Cost Breakdown of SSC Clinics by Line Item, 1993

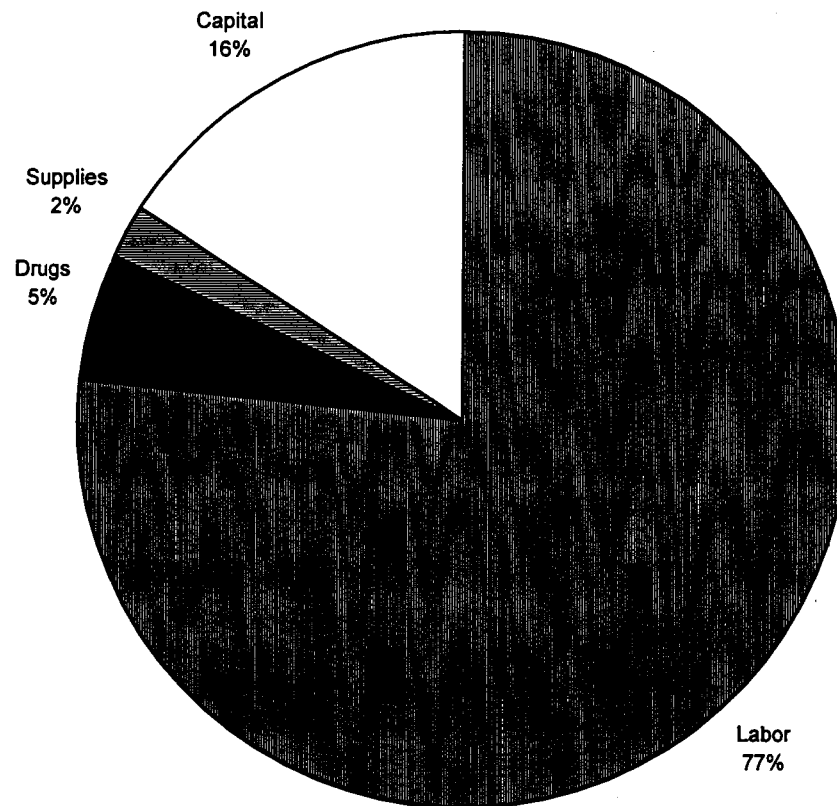


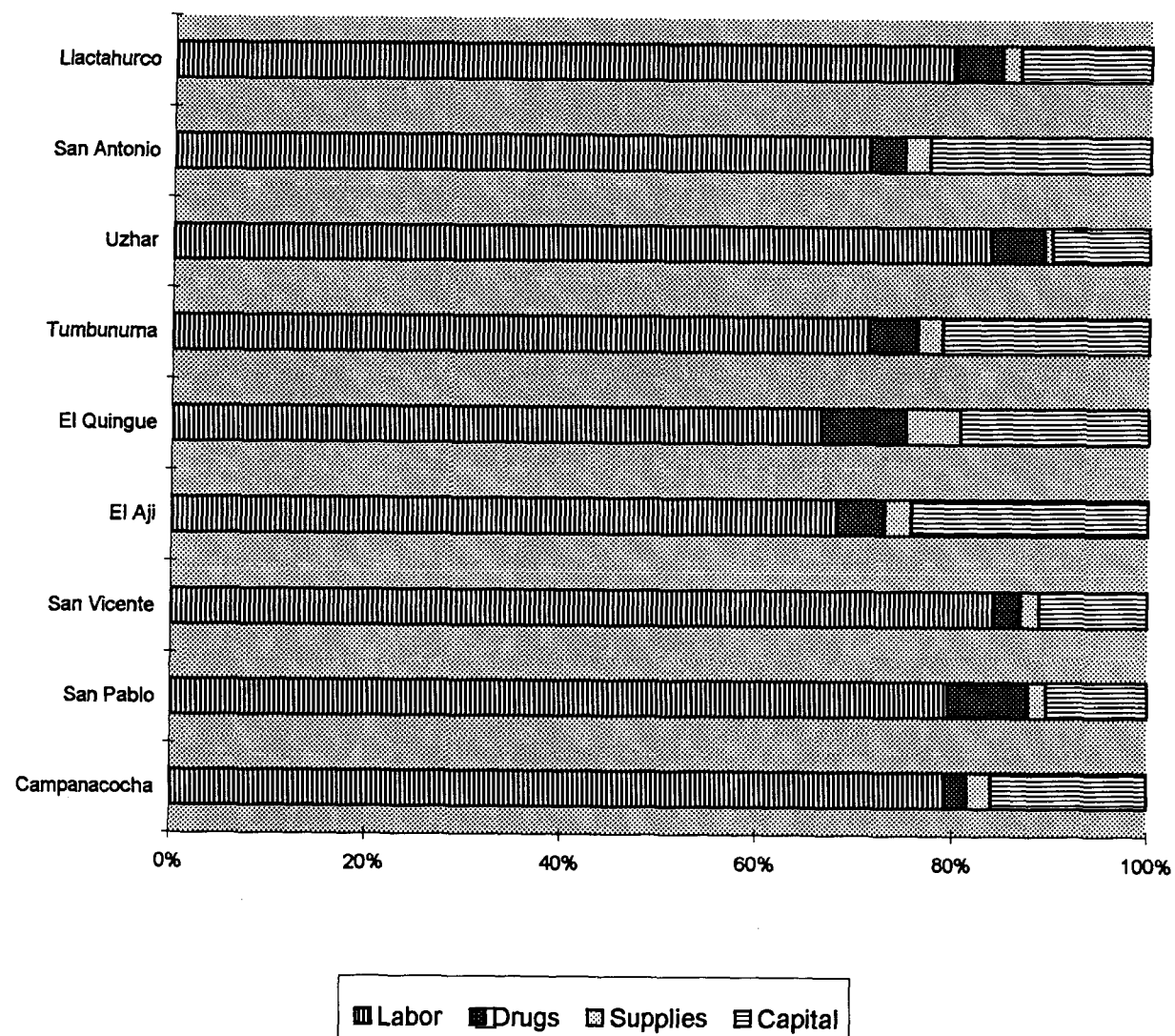
Exhibit 5-1: Cost Components of Nine SSC Sample Clinics, 1993, in Sucres

Clinic	Labor		Capital Costs*		Drugs		Supplies**		Total		No. Months Physician Present (1993)	Total No. of Clinic Visits in 1993
	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	%		
Llactahurco	19,173,061	80%	3,219,466	13%	1,147,090	5%	450,005	2%	23,989,622	100%	9	2,089
San Antonio de Alao	16,656,557	71%	5,294,392	23%	834,193	4%	600,681	3%	23,385,823	100%	12	1,806
Uzhar	19,759,225	84%	2,356,805	10%	1,292,305	5%	193,471	1%	23,601,806	100%	12	2,241
Tumbunuma	11,340,816	71%	3,387,010	21%	793,117	5%	399,968	3%	15,920,911	100%	5	1,898
El Quingue	12,979,675	66%	3,785,503	19%	1,694,073	9%	1,086,919	6%	19,546,170	100%	5	3,649
El Aji	12,823,937	68%	4,564,551	24%	886,249	5%	526,100	3%	18,800,837	100%	6	2,724
San Vicente	23,187,798	84%	3,067,754	11%	763,917	3%	526,100	2%	27,545,569	100%	12	1,979
San Pablo	25,986,365	79%	3,394,109	10%	2,720,137	8%	605,755	2%	32,706,366	100%	12	8,035
Campanacocha	18,149,741	79%	3,666,211	16%	521,304	2%	564,903	2%	22,902,159	100%	6	2,441
ALL CLINICS (AVERAGE)	17,784,131	77%	3,637,311	16%	1,183,598	5%	550,434	2%	23,155,474	100%	8.7	2,985

* Includes the cost of the clinic building, medical equipment, medical instruments and office equipment.

** Includes medical and office supplies.

Graph 5-2: Comparisons Across SSC Sample of Cost Breakdown By Line Item, 1993



five or six months of the year. The four clinics that had a physician for only five or six months -- Tumbunuma, El Quingue, El Aji, and Campanacocha -- were those that had the lowest absolute labor expenditures and lowest total expenditures. The two clinics that had the highest expenditures -- San Pablo and San Vicente -- had a physician throughout the year.

However, there are clearly other factors, besides the portion of the year a physician was present, that contributed to the substantial differences in labor costs among clinics. For example, the Campanacocha clinic's labor costs (18,149,741 sucres) were higher than that of the San Antonio de Alao clinic (16,656,557 sucres), despite the fact that the Campanacocha clinic had no physician for half the year, whereas the San Antonio de Alao clinic had a physician for all 12 months. Other factors explaining the differences in labor costs may include differences in staff salary levels and differences in the number of days per week that physicians work.

Costs of **drugs and supplies** also varied considerably by clinic. While drug costs were only 521,304 sucres in the Campanacocha clinic, constituting two percent of its total costs in 1993, they were more than five times that amount (2,720,137 sucres) in the San Pablo clinic, where they accounted for eight percent of total costs. The last column in *Exhibit 5-1*, which shows the total number of visits made to the physician and nurse auxiliary combined in 1993, explains much of this variation in drug and supply costs. The two clinics that incurred the highest drug costs, as well as the highest combined drug and supply costs -- San Pablo and El Quingue -- are also the two clinics with the highest number of recorded visits for the year (8,035 and 3,649, respectively for physician and nurse auxiliary visits combined, versus an average of 2,168 visits for the other seven clinics). However, drug and supply costs can be limited by the ability of the system to provide adequate stocks. Therefore, although the El Aji clinic recorded over 900 more patient visits in 1993 than the San Antonio de Alao clinic, the combined costs of drugs and supplies were similar for the two clinics (around 1.4 million sucres), which may be an indication of shortages of drugs and/or supplies at the El Aji clinic.

In *Exhibit 5-2*, total costs and costs per budget category are shown in terms of costs per SSC member household for each clinic. Total costs per household for the year 1993 averaged around 69,000 sucres per household (around US\$ 33.75), and ranged from around 43,000 sucres (US\$21.00) at the clinics in San Pablo, Tumbunuma, and El Aji to more than 160,000 sucres (around US\$78.00) at the Campanacocha clinic, a nearly four-fold difference. The cost per household is clearly a function of the number of households associated with each clinic, as well as the level and cost of inputs. The four clinics with the lowest level of membership -- Campanacocha, El Quingue, Lactahurco, and San Antonio de Alao, which each had less than 250 households -- had the highest total costs per member household (between 104,000 and 163,000 sucres -- around US\$51.00 to US\$80.00). Conversely, the three clinics with the highest number of member households -- San Pablo, El Aji, and Tumbunuma, which had between 371 and 762 households -- had the lowest total costs per household (approximately 43,000 sucres or around US\$21.00). These figures point to the importance of expanding SSC membership in order to lower total costs per household.

When costs per SSC member household are examined by budget categories, labor costs averaged around 53,000 sucres per household for the nine clinics, and ranged from around 30,000 sucres at the clinics in El Aji, Tumbunuma, and San Pablo to more than four times as much (nearly 130,000 sucres) at the Campanacocha clinic. As with total costs, the four clinics with the highest labor costs per member household were those with the fewest number of households affiliated with the SSC. The second largest cost component -- capital costs, which averaged around 11,000 sucres -- shows similar patterns in differences among clinics; three of the four clinics with less than 250 member households incurred capital

Exhibit 5-2: Analysis of Components of SSC Clinic Costs for 1993 per SSC Member Household, in Sucre

Clinic	No. SSC Member Households	Labor Costs per Household	Capital Costs per Household*	Drug Costs per Household	Supplies Costs per Household**	Total Costs per Household
Llactahurco	228	84,092	14,120	5,031	1,974	105,218
San Antonio de Alao	243	68,546	21,788	3,433	2,472	96,238
Uzhar	306	64,573	7,702	4,223	632	77,130
Tumbunuma	371	30,568	9,129	2,138	1,078	42,914
El Quingue	188	69,041	20,136	9,011	5,781	103,969
El Aji	431	29,754	10,591	2,056	1,221	43,621
San Vicente	344	67,406	8,918	2,221	1,529	80,074
San Pablo	762	34,103	4,454	3,570	795	42,922
Campanacocha	140	129,641	26,187	3,724	4,035	163,587
ALL CLINICS (AVERAGE)	335	53,122	10,865	3,535	1,644	69,167

* Includes the value of the clinic building, medical equipment, medical instruments, and office equipment.

** Includes the value of medical and office supplies.

costs of over 20,000 sucres per household. Drug costs averaged around 3,500 sucres per member household for the year (around US\$1.70). The El Quingue clinic incurred the highest drug costs per household (at 9,011 sucres or US\$ 4.40), and El Aji incurred the lowest (at 2,056 or US\$1.00). Drug costs per household at the San Pablo clinic, which spent in absolute terms more on drugs than any of the nine clinics, were close to the average cost.

In summary, labor costs accounted for the highest portion of clinic-level costs at the nine sample clinic in 1993: from 66 to 84 percent, and 77 percent overall. Capital costs, including the clinic building and equipment accounted for 10 and 24 percent of total expenditures (16 percent on average), and drugs and supplies combined accounted for seven percent on average. There were substantial differences among clinics in their overall costs for the year, in the proportion of their costs that were incurred by various line items (such as labor, capital costs, and drugs and supplies), and in the total costs that the clinics incurred per SSC household. The differences in the proportion of the year a physician was present accounted for some of the differences in both labor and overall costs among clinics. There was also a relationship between the total costs a clinic incurred on drugs and supplies and its patient volume for the year. A large factor explaining the differences in costs per SSC member household was the total number of households served by the clinics.

5.3.2 Breakdown of Costs by Type of Service

Graph 5-3 shows the average breakdown of costs by the type of health service for the seven clinics that had dental services in 1993 and the two that did not. The breakdown by type of health services for each of the nine clinics are shown in *Exhibit 5-3*. As expected, curative services accounted for the majority of total clinic costs, making up 74 percent of the costs of the clinics that had no dental services, and 55 percent, on average, of those with dental services. Dental services accounted for 15 percent of total costs in the seven clinics that had a dentist in 1993, and ranged from eight percent of costs at the San Antonio de Alao clinic to 22 percent of costs at San Pablo, where the dentist worked six months of the year -- a full four months more than at most of the other clinics.

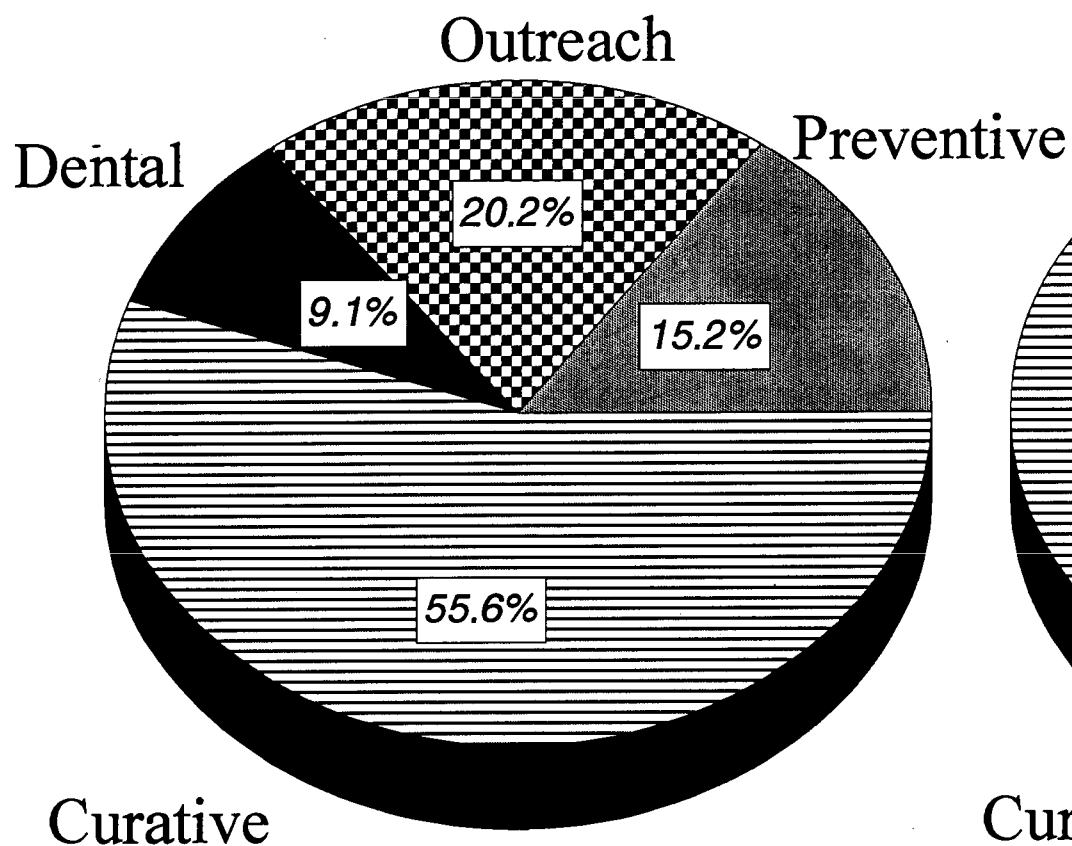
Preventive services constituted, on average, nine percent of total costs, and ranged from only three percent of costs at the clinics in Tumbunuma and San Vicente to 14 percent at the San Pablo clinic. Outreach activities accounted for another 20 percent of total costs on average, but varied widely by clinic. Outreach costs at three clinics -- San Vicente, Tumbunuma, and Llactahurco -- made up between 28 and 40 percent of total costs, which reflect the greater amount of time that staff at these clinics devote to outreach activities compared to the other clinics, for which outreach activities accounted for only 9 to 20 percent of total costs (see *Section 3.2.1.5*).

5.3.3 Total and Unit Costs of Medical (Non-Dental) Care

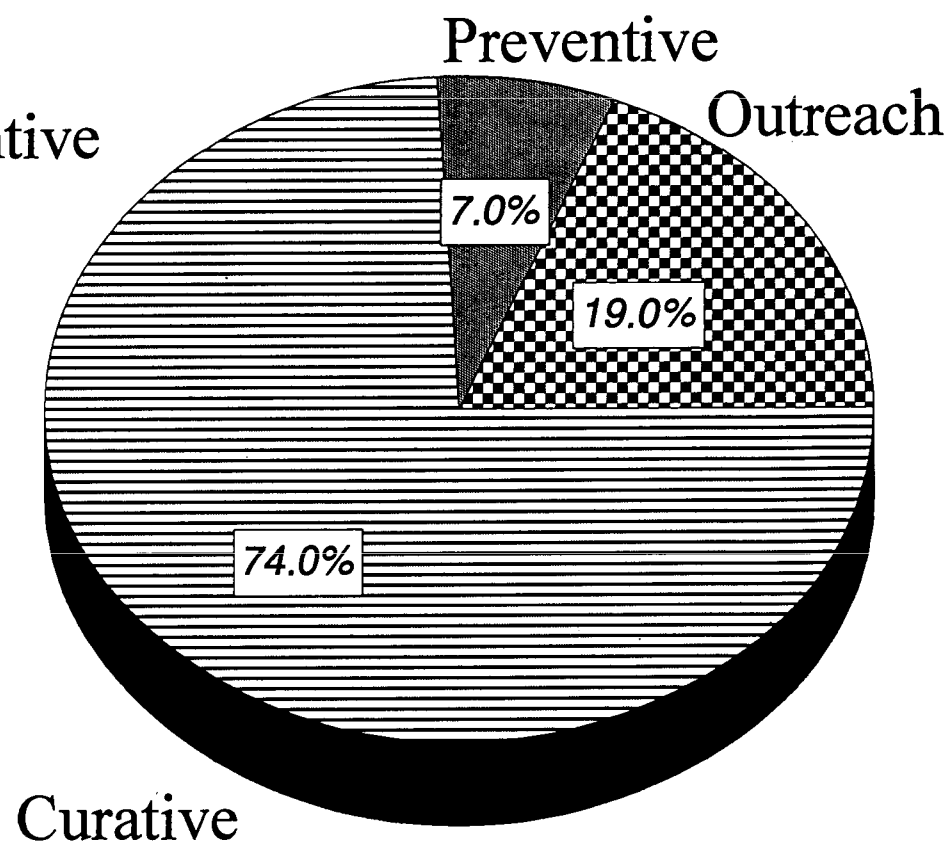
In this section, we discuss the costs of clinical medical care, that is all non-dental care provided directly in the clinics. It does not include outreach activities, the costs of which are discussed above in *Section 5.3.2*. The costs of dental care are discussed separately in *Section 5.3.4*.

Exhibit 5-4 shows the total and unit (i.e., per visit) costs of clinical care provided by physicians and nurse auxiliaries. The mean cost per visit to the physician was 6,801 sucres, around US\$3.32.

Graph 5-3: Average Cost Breakdown by Type of Service and by Clinic, 1993 (in Sucre)



Clinics with a Dentist



Clinics without a Dentist

Exhibit 5-3: Breakdown of Costs by Type of Service and by Clinic, 1993 (in Sucres)										
Clinic	Curative		Preventive		Outreach		Dental		Total	
	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	%
Llactahurco	11,835,139	49%	2,535,291	11%	6,626,269	28%	2,992,923	12%	23,989,622	100%
San Antonio de Alao	16,305,466	70%	3,309,765	14%	1,993,976	9%	1,776,616	8%	23,385,823	100%
Uzhar	17,419,943	74%	1,538,111	7%	4,643,752	20%	--	0%	23,601,806	100%
Tumbunuma	6,617,474	42%	465,530	3%	4,718,335	30%	4,119,572	26%	15,920,911	100%
El Quingue	14,497,972	74%	1,590,964	8%	3,457,234	18%	--	0%	19,546,170	100%
El Aji	12,169,226	65%	1,810,927	10%	2,060,850	11%	2,759,834	15%	18,800,837	100%
San Vicente 3	11,446,074	42%	917,007	3%	11,067,202	40%	4,115,286	15%	27,545,569	100%
San Pablo 3	17,541,920	54%	4,739,585	14%	3,337,082	10%	7,087,779	22%	32,706,366	100%
Campanacocha	15,519,152	68%	1,841,944	8%	2,815,140	12%	2,725,923	12%	22,902,159	100%
ALL CLINICS (AVERAGE)	13,705,818	59%	2,083,236	9%	4,524,427	20%	2,841,993	12%	23,155,474	100%

However, it should be noted that the mean cost per visit is influenced heavily by the relatively low per visit costs at the San Pablo clinic, which alone, accounted for more than one-third of all physician consultations recorded at the nine clinics. If we eliminate the San Pablo clinic, the mean cost of a visit to the physician goes up to 8,092 sucres (US\$3.96). As the exhibit shows, the costs per visit to the physician differ considerably by clinic. For instance, the cost per physician visit at San Antonio de Alao (12,667 sucres -- US\$6.19) was three times greater than that at the El Aji clinic (3,804 sucres -- US\$1.86). At four of the nine clinics, the costs of physician visits were between 6,000 and 9,400 sucres (around US\$2.90 to US\$4.60).

The mean cost per visit to a nurse auxiliary was 4,653 sucres (US\$2.27), about two-thirds the mean cost of a visit to a physician. Again, the mean was weighted down heavily by the low cost and high volume of visits to the nurse auxiliary at the San Pablo clinic. Note that nurse auxiliaries saw, on average, nearly twice as many patients as the physicians, which partly explains the lower unit costs of visits to the nurse auxiliary versus those to the physician. The disparity in unit costs across clinics is even greater for the nurse auxiliary than for the physician. As in the case of physician visits, the highest cost per visit to a nurse auxiliary was at the San Antonio de Alao clinic, where it was more than five times greater than the cost per visit at the San Pablo clinic (10,013 sucres vs. 1,777 sucres).

Unit costs appear to be strongly affected by patient volume. The three clinics with the lowest per visit costs to the physician (El Aji, San Pablo, and San Vicente) were also those that both saw the greatest number of patients in 1993, and that recorded above average numbers of daily visits to the physician (around 15 per day) on days when the physician was present (see *Exhibit 3-17*). Conversely, the costs per physician visit were highest at the three clinics (San Antonio de Alao, Uzhar, and Lactahurco) that recorded only around five patient visits to the physician per day (*Exhibit 3-17*). The relationship between unit costs and utilization is less clear for visits to the nurse auxiliary. There is also a relationship between unit costs and SSC membership size, which is closely related to utilization rates. The three clinics with the lowest costs per physician visit (El Aji, San Pablo, and San Vicente) had an average of 512 member households, compared to an average of 246 households at the remaining six clinics (see *Exhibit 5-2*). The number of months a physician was present during 1993, which strongly affected labor costs and total costs, as discussed above, did not appear to affect unit costs, which varied nearly three-fold among the four clinics (San Antonio de Alao, Uzhar, San Vicente, and San Pablo) that had a physician year round. This result is not surprising, since the amount of time a physician is present during the year and the number of patients he or she sees should correspond to some extent.

This analysis further broke down total clinical care costs by curative and preventive services (see *Exhibits 5-5 and 5-6*). Both within each clinic, and on average, the costs of curative and preventive care visits are quite similar. Curative care visits to the physician averaged 6,833 sucres, while preventive care visits to the physician averaged 6,668 sucres. The main outlier is the cost per preventive care visit to the nurse auxiliary in El Aji, which, at 33,437 sucres, is six times higher than the cost of a curative care visit to the same nurse auxiliary, and is responsible for the higher mean cost per visit to the nurse auxiliary for preventive as compared to curative care (5,337 sucres vs. 4,595 sucres). This high cost per visit at the El Aji clinic reflects the combination of high total costs for preventive care allocated to the nurse auxiliary and a small number of preventive care patients (41) that she saw in 1993.

Exhibit 5-4: Clinical (Non-Dental) Care: Total Costs and Costs per Visit of Clinical Care (Curative + Preventive) by Medical Personnel and by Clinic, 1993* (in Sucres)						
Clinic	PHYSICIAN			NURSE AUXILIARY		
	Total Costs	No. Patients Seen	Cost/Visit	Total Costs	No. Patients Seen	Cost/Visit
Llactahurco	7,227,886	679	10,645	7,142,544	1,399	5,105
San Antonio de Alao	7,308,823	577	12,667	12,306,408	1,229	10,013
Uzhar	8,877,414	803	11,055	10,172,841	1,438	7,074
Tumbunuma	3,130,919	360	8,697	3,995,043	1,538	2,598
El Quingue	4,193,094	443	9,465	12,023,448	3,206	3,750
El Aji	4,389,970	1,154	3,804	9,596,358	1,569	6,116
San Vicente 3	8,439,881	1,399	6,033	3,973,497	580	6,851
San Pablo 3	13,837,090	3,185	4,344	8,613,093	4,848	1,777
Campanacocha	5,456,280	643	8,486	11,904,816	1,329	8,958
ALL CLINICS (AVERAGE)	6,984,595	1,027	6,801	8,858,672	1,904	4,653

*Clinical care defined as curative and preventive visits, including vaccinations and excluding deliveries (only 11 in 1993).

Exhibit 5-5: Curative Care: Total Costs and Costs per Visit by Medical Personnel and by Clinic, 1993 (in Sucres)						
Clinic	PHYSICIAN			NURSE AUXILIARY		
	Total Costs	No. Patients Seen	Cost/Visit	Total Costs	No. Patients Seen	Cost/Visit
Llactahurco	5,055,775	475	10,644	6,779,364	1,327	5,109
San Antonio de Alao	5,750,324	454	12,666	10,555,142	1,054	10,014
Uzhar	7,877,142	714	11,032	9,542,801	1,350	7,069
Tumbunuma	2,794,261	321	8,705	3,823,213	1,469	2,603
El Quingue	3,608,811	383	9,422	10,889,161	2,904	3,750
El Aji	3,943,776	1,038	3,799	8,225,450	1,528	5,383
San Vicente 3	7,975,551	1,324	6,024	3,470,523	507	6,845
San Pablo 3	9,761,672	2,247	4,344	7,780,248	4,378	1,777
Campanacocha	3,971,343	469	8,468	11,547,809	1,286	8,980
ALL CLINICS (AVERAGE)	5,637,628	825	6,833	8,068,190	1,756	4,595

Exhibit 5-6: Preventive care: Total Costs and Costs per Visit by Medical Personnel and by Clinic, 1993 (in Sucres)						
Clinic	PHYSICIAN			NURSE AUXILIARY		
	Total Costs	No. Patients Seen	Cost/Visit	Total Costs	No. Patients Seen	Cost/Visit
Llactahurco	2,172,111	204	10,648	363,180	72	5,044
San Antonio de Alao	1,558,499	123	12,671	1,751,266	175	10,007
Uzhar	1,000,272	89	11,239	630,040	88	7,160
Tumbunuma	336,658	39	8,632	171,830	69	2,490
El Quingue	584,284	60	9,738	1,134,288	302	3,756
El Aji	446,194	116	3,847	1,370,908	41	33,437
San Vicente 3	464,330	75	6,191	502,974	73	6,890
San Pablo 3	4,075,418	938	4,345	832,845	470	1,772
Campanacocha	1,484,937	174	8,534	357,007	43	8,302
ALL CLINICS (AVERAGE)	1,346,967	202	6,668	790,482	148	5,337

5.3.4 The Costs of Dental Care

Total costs of dental care by major budget categories are given in *Exhibit 5-7*. Total dental costs were much higher at the San Pablo clinic than elsewhere mainly because of the increased labor costs resulting from the fact that the dentist worked six months at that clinic in 1993, versus around two months at the other clinics. As with medical care, labor costs make up the bulk of dental care costs, 74 percent on average. These data also reveal the large differences by clinic in capital costs (mainly in dental equipment) allocated to dental services. Tumbunuma and San Vicente had the highest capital costs (26-27%) as a percent of total dental costs, whereas capital costs at the San Pablo and El Aji clinics only constituted eight percent of total dental costs. Supplies accounted for five to 19 percent of total dental costs.

Exhibit 5-8 shows the unit cost for dental services at the seven sample clinics that offered dental care in 1993. The average cost of a visit to a dentist was 4,542 sucres (US\$2.22), close to the mean cost of a visit to a nurse auxiliary. The cost per dental visit varied considerably by clinic, from a low of 2,795 sucres (US\$1.37) at the San Pablo clinic to more than 10,000 sucres (around US\$5.00) at the clinics in Tumbunuma and San Vicente. These high per visit costs at Tumbunuma and San Vicente are due mainly to the large capital costs allocated to dental services incurred by these two clinics.

Exhibit 5-8 also shows the effects of utilization on unit costs for dental services. Costs for a dental visit were highest in San Vicente, Tumbunuma, and Campanacocha, where the absolute number of dental visits was lowest. Note that two of these clinics also had the lowest rates of utilization per household for dental care (1.1 visits per member household). (The unit costs in Tumbunuma and San Vicente are also probably inflated by the high estimated capital costs.) Conversely, the San Pablo clinic, which had the lowest unit costs for dental services (2,795 sucres), had an average dental patient volume of 423 per month, compared to most of the other clinics in the survey, which averaged between 192 and 273 dental patients per month²³.

Exhibit 5-9 shows unit costs for four specific dental services offered: treatment (including fillings), dental examination, preventive dental care (including cleaning and prophylaxis), and tooth extractions. Within any one clinic, the unit costs of these services are quite similar from one to the next. However, as in the case of total dental services, they vary substantially by clinic. For example, the cost of a preventive dental visit was nearly five times less at the San Pablo clinic (2,808 sucres) than at the El Aji clinic (13,604 sucres). Much of this differential is again due to the fact that the monthly volume of dental patients at the San Pablo clinic was substantially higher than at most of the other clinics.

5.3.5 Marginal Costs of Providing Clinical Care

The marginal costs of providing non-dental clinical care (curative and preventive) at each clinic are shown in *Exhibit 5-10* for physicians and nurse auxiliaries combined. In calculating marginal costs, which are the costs of seeing one more patient or providing one more service, we included only the recurrent or variable costs of drugs and medical supplies, which were then divided by the number of

²³ With the exception of the Lactahurco clinic, which recorded 798 dental visits in 1993, or 399 per month, and had unit costs of 3,751 sucres.

Exhibit 5-7: Components of Dental Services Costs in 1993 (in Sucres)

Clinic	Labor		Supplies		Capital Costs*		Total	
	Amount	% of Total	Amount	% of Total	Amount	% of Total	Amount	%
Llactahurco	2,028,775	68%	332,760	11%	631,387	21%	2,992,923	100%
San Antonio del Alao	1,029,765	58%	338,659	19%	408,192	23%	1,776,616	100%
Uzhar	—	—	—	—	—	—	—	—
Tumbunuma	2,690,903	65%	331,777	8%	1,096,892	27%	4,119,572	100%
El Quingue	—	—	—	—	—	—	—	—
El Aji	2,196,601	80%	331,717	12%	231,516	8%	2,759,834	100%
San Vicente	2,704,681	66%	331,717	8%	1,078,888	26%	4,115,286	100%
San Pablo 3	6,206,177	88%	336,436	5%	545,166	8%	7,087,779	100%
Campanacocha	2,122,408	78%	331,828	12%	271,688	10%	2,725,923	100%
ALL CLINICS (AVERAGE)**	2,711,330	74%	333,556	9%	609,104	17%	3,653,990	100%

* Includes building, dental equipment, and office furniture costs.

** The mean of only the seven clinics that provided dental services in 1993.

Exhibit 5-8: Dental Services: Total Costs and Costs per Visit of all Dental Services Combined, by Clinic, 1993, in Sucres

Clinic	Total Costs	No. Patients Seen	Cost/Visit	Visits/SSC Household
Llactahurco	2,992,923	798	3,751	3.5
San Antonio de Alao	1,776,616	546	3,254	2.2
Uzhar	—	—	—	—
Tumbunuma	4,119,572	399	10,325	1.1
El Quingue	—	—	—	—
El Aji	2,759,834	546	5,055	1.3
San Vicente 3	4,115,286	384	10,717	1.1
San Pablo 3	7,087,779	2,536	2,795	3.3
Campanacocha	2,725,923	423	6,444	3.0
ALL CLINICS (AVERAGE)*	3,653,990	805	4,542	2.2

* The mean of only the seven clinics that provided dental services in 1993.

Exhibit 5-9: Total Costs and Costs per Visit of Dental Services, by Service and by Clinic, 1993, in Sucre

Clinic	DENTAL EXAMINATION			PREVENTIVE DENTAL CARE*		
	Total Costs	No. Patients Seen	Cost/ Visit	Total Costs	No. Patients Seen	Cost/ Visit
Llactahurco	818,268	234	3,497	676,645	190	3,561
San Antonio de Alao	513,295	138	3,720	396,637	107	3,707
Uzhar	0	0	0	0	0	0
Tumbunuma	1,008,875	95	10,620	1,050,911	101	10,405
El Quingue	0	0	0	0	0	0
El Aji	816,585	138	5,917	1,455,651	107	13,604
San Vicente 3	1,413,950	159	8,893	1,378,601	156	8,837
San Pablo 3	1,678,361	596	2,816	2,560,798	912	2,808
Campanacocha	983,900	180	5,466	447,227	81	5,521
AVERAGE**	1,033,319	220	4,697	1,138,067	236	4,816

Clinic	DENTAL TREATMENT***			TOOTH EXTRACTION		
	Total Costs	No. Patients Seen	Cost/ Visit	Total Costs	No. Patients Seen	Cost/ Visit
Llactahurco	582,229	165	3,529	660,909	188	3,515
San Antonio de Alao	373,305	101	3,696	466,632	131	3,562
Uzhar	0	0	0	0	0	0
Tumbunuma	1,177,021	108	10,898	882,765	81	10,898
El Quingue	0	0	0	0	0	0
El Aji	0	0	0	213,022	131	1,626
San Vicente 3	0	0	0	318,139	34	9,357
San Pablo 3	17,303	9	1,923	1,782,177	637	2,798
Campanacocha	357,782	68	5,261	447,227	81	5,521
AVERAGE**	501,528	90	5,560	681,553	183	3,719

* Includes cleaning and prophylaxis.

** The mean of only those clinics which offered these services in 1993.

*** Includes fillings and other dental operations.

Exhibit 5-10: Marginal Costs of Clinical Care in 1993 (in Sucre)*

Clinic	Variable Costs:			No. Patients	Marginal Cost
	Drugs	Medical Supplies	Total		
Llactahurco	1,147,090	112,143	1,259,233	2,078	606
San Antonio del Alao	834,193	100,724	934,917	1,806	518
Uzhar	1,292,305	190,742	1,483,047	2,241	662
Tumbunuma	793,117	67,827	860,944	1,898	454
El Quingue	1,694,073	999,281	2,693,354	3,649	738
El Aji	886,249	194,383	1,080,632	2,723	397
San Vicente 3	763,917	194,383	958,300	1,979	484
San Pablo 3	2,720,137	248,485	2,968,622	8,033	370
Campanacocha	521,304	230,890	752,194	1,972	381
AVERAGE	1,183,598	259,873	1,443,471	2,931	492

*Clinical care defined as curative and preventive care (deliveries excluded).

patients seen at each clinic. (These marginal costs assume no improvement in the current supply of drugs and medical supplies). Labor costs were not included, since, based on the fact that, on average, 29 percent of physician's time and 15 percent of the nurse auxiliary's time was "unaccounted for", it is assumed that the staff in the clinics are currently under-utilized (see *Section 3.2.1.6*). Therefore, increasing the number of consultations that the staff provide (up to a certain point), and thus their productivity, should not involve added labor costs. Capital costs were also not included in calculating marginal costs, since physical facilities and equipment were also assumed to be under-utilized.

These marginal costs range from 370 sucres (US\$0.18) in the San Pablo clinic to 738 sucres at El Quingue (US\$0.36), with a mean of 492 sucres (US\$0.24). Thus, on average, each additional consultation costs an SSC clinic less than 500 sucres. These marginal costs indicate that the costs of providing more services are, on their own, quite low. Of course, as mentioned earlier, increasing utilization of SSC services will also require other actions, such as improving the drug supply or conducting promotional activities. These actions involve costs, which must be considered when estimating the overall costs of increasing utilization and coverage of the SSC.

5.3.6 The Costs of Improving the Quality of Health Care

The demand analysis (*Section 4.0*), which is based on the results of the household survey, revealed a strong relationship between the demand for health services and the perceived quality of care. The aspect of quality most affecting demand was the perceived availability of drugs at the clinics. As discussed in *Section 4.0*, an increase in the perceived quality of care of 14 percent at SSC clinics (using a quality of care index based on consumers' ratings of six aspects of quality), would theoretically result in a 18 percent increase in the probability of an SSC member seeking care at an SSC clinic for an illness, and a 13 percent increase in the number of SSC-affiliated households, which would lead to a further increase in utilization. Thus, the total effect of the 14 percent improvement in quality of care would theoretically be a 33 percent increase in utilization at SSC clinics. The demand analysis estimated that this level of increase in utilization would require an increase of around 8,600 sucres (US\$ 4.20) in the drug and supply consumption per SSC member household from the current average of about 5,200 sucres (see *Exhibit 5-2*) to 13,800 sucres. Therefore, to increase the clinics' utilization by one-third would, on average, require a 167 percent increase in the costs of drugs and supplies per household. This translates to an overall increase per SSC member household from 69,000 sucres to almost 78,000 sucres, or 12.5 percent. If these costs were covered by user fees, as suggested in *Section 4.0* on the demand analysis, investing in improving the quality of care would accomplish the triple goals of increasing utilization of SSC services, expanding SSC membership, and improving the financial sustainability of the system.

5.4 SUMMARY AND CONCLUSIONS

- ▲ This cost analysis provides estimates of clinic-level costs only and does not include the costs of administration and supervision at the central and regional levels of the SSC organization, because of a lack of data. An analysis of these central and regional costs, which could be as high as 60 percent of clinic-level costs, needs to be performed, in order to obtain better estimates of the costs of SSC services.
- ▲ Total at-site costs of the nine sample clinics in 1993 (exclusive of central and regional costs) ranged from around 16 million to 33 million sucres (approximately US\$7,800 to

\$16,140). A portion of the differences in costs between clinics was due to the fact that several clinics did not have physicians for a good part of the year (up to six or seven months). Other factors contributing to the vast differences in costs among clinics are the large differences in salary levels of staff from one clinic to the next, differences in capital costs (building, equipment, etc.), and differences in drug expenditures. The variations in total costs reflect differences in membership size only to a minor extent. On average, 84 percent of costs were recurrent and 16 percent were capital costs. Labor costs made up an average of 91 percent of recurrent costs and 77 percent of total clinic-level costs. On average, drug costs only constituted five percent of total costs, but were higher (8-9%) as a percent of total costs at the two clinics -- El Quingue and San Pablo -- that were the most utilized (in terms of patient visits per day).

- ▲ Total costs of the clinics per SSC member household for the year 1993 ranged from approximately 43,000 sucres (US\$21.00) to more than 163,000 sucres (around US\$80.00). Assuming an average household size of 5.5 people, costs per capita therefore ranged from around 7,800 sucres (US\$3.82) to approximately 29,700 sucres (US\$14.50). As expected, the clinics with the lowest costs per household were those that had the largest numbers of SSC member households. The costs per household was substantially higher in areas, such as Campanacocha and El Quingue, which served relatively few households (less than 200). This finding is not surprising given that many of the costs involved in running the clinics, such as labor and capital costs, will not necessarily increase substantially as SSC membership expands. This finding therefore points to the need to expand SSC membership in order to decrease costs per household.
- ▲ For the clinics that provided dental services, curative care made up, on average, 55 percent of total costs, outreach activities made up 20 percent, dental care accounted for 15 percent, and preventive care services made up nine percent. The breakdown of costs for the two clinics that did not offer dental services was similar, except that curative care made up 74 percent of the total costs. In three of the clinics -- San Vicente, Tumbunuma, and Llactahurco -- outreach activities constituted 28 percent to 40 percent of total costs.
- ▲ The cost of a clinical visit to the physician ranged from 3,804 sucres (US\$1.86) to 12,667 sucres (US\$6.19), with an average of 6,801 sucres (US\$3.32). The cost of a visit to the nurse auxiliary was on average about two-thirds that of a visit to the physician (4,653 sucres -- about US\$2.27), and also varied widely by clinic, ranging from 1,777 sucres to 10,013 sucres (US\$0.87 to US\$4.90).
- ▲ The three to five-fold differences in unit costs among clinics, especially costs per visits to the physician, are due in part to differences in the size of SSC membership and patient volume. The three clinics with the lowest costs per physician visit (El Aji, San Pablo, and San Vicente) were also those that had higher than average numbers of patient visits to the physician per day (around 15), and those with the highest per unit costs had the lowest daily number of visits to the physician (around 5). The relationship between utilization and cost of visits to the nurse auxiliary is less clear. The clinics with the lower costs per visits to the physician were also those with the largest numbers of SSC member households. This finding again points to the need to both expand membership and to

increase utilization among current SSC members in order to reduce unit costs of health services.

- ▲ The cost of a visit to the dentist ranged from 2,795 sucres (US\$1.37) to 10,717 sucres (US\$5.25), and averaged 4,542 (US\$2.22) -- about the same cost as a visit to the nurse auxiliary. The nearly four-fold differences in cost per dental visit between the highest and lowest cost clinics are mainly due to large differences in utilization rates, differences in capital costs, and salary differentials among dentists.
- ▲ Because there appeared to be considerable under-utilization of capacity at the clinics surveyed, it was assumed that a higher volume of patients could be served without additional staff or physical facilities. Therefore, our estimates of marginal costs, which are the costs of serving one more patient or providing one more service, include only the added costs of drugs and supplies, and no additional labor or capital costs. On this basis, the marginal costs of a clinical visit at the nine clinics were calculated at 370 sucres to 738 sucres (US\$0.18 to \$0.36), with an average of 492 sucres (US\$0.24).
- ▲ According to our demand analysis, utilization of SSC facilities could increase by one-third if the perceived quality of care, as measured by a quality of care index, is increased by 14 percent. These quality improvements would cost, on average, an additional 8,600 sucres (US\$4.20) per household in drug and supply costs. This is an increase of 167 percent in the current average drug and supply costs per household, and an increase of 12.5 percent in total clinic costs per household. The demand analysis indicates that the most effective and realistic way to meet these added costs would be to impose official user fees, which the analysis shows would not significantly lower utilization rates of the clinics.

5.5 POLICY IMPLICATIONS

The results of the cost analysis have the following policy implications:

- ▲ The most effective means of decreasing unit costs of health care at SSC clinics, which are in some instances quite high, are to expand SSC membership served by the clinics, and to otherwise increase the utilization of the clinics.
- ▲ Improving the drug supply at the clinics would be an effective means of both increasing membership and utilization. User fees could pay for the costs of improving the drug supplies. For example, fees could be charged for drugs, which would be used to replenish the drug supply, thus creating a clinic-based Revolving Drug Fund.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

Below are the major conclusions based on the results of this assessment:

1. **Staffing of SSC Clinics:** Based on the experience of the nine clinics included in the survey, the SSC appears to have great difficulty recruiting and retaining medical staff, especially physicians, for its clinics, which are all located in rural areas. According to SSC members, the part-time schedule of the physicians (who all work at two clinics each) and dentists (most of whom work at each clinic only two months per year) is a major disadvantage of using SSC facilities, and a reason SSC members sometimes seek health services from other providers. The demand analysis also showed that the more the physician was available (measured in terms of physician hours worked), the greater the likelihood that SSC members would seek health care for an illness. These results point to the need to implement policies that will better attract and retain clinical staff at SSC facilities. Although increasing staff time at each clinic would increase utilization, the feasibility of doing so will be limited, to a large extent, by both each clinic's current and potential membership size, and by the added costs that will be incurred.
2. **Types of Services Provided by the SSC:** Although all clinics in the survey conduct outreach activities, some more extensively than others, the majority of services provided by the clinics involve curative care. Given the fact that the diseases that continue to predominate in much of rural Ecuador are still largely preventable, the SSC's preventive care services are woefully inadequate. The fact that immunization services are not provided on a routine basis, due in part to the lack of refrigerators to store vaccines, points to the lack of emphasis on preventive health care, and undoubtedly results in many missed opportunities to immunize children seeking treatment for illnesses. Few family planning services are also being provided at most of the sample clinics, although low demand is likely to be a major reason. It was not possible in this study to determine the adequacy of the coverage of outreach activities in the communities served by the clinics.
3. **SSC Coverage of the Population:** Four of the nine sample clinic sites had less than the minimum target of 300 SSC member households; in two cases this was due to the small number of total households in the clinic catchment areas, whereas in the remaining two, the SSC enrollment rate among households was only around 50%. Enrollment rates within the catchment areas of the nine same clinics averaged 60 percent, and ranged from 43 percent to 81 percent. These data show considerable potential for increasing the enrollment rates, and thus the number of affiliate households, within existing clinics catchment areas.
4. **Patient Volume at SSC Facilities:** Estimates of patient volume at the nine sample clinics were in general quite low. During the days that they were present in the clinics, physicians saw on average less than 10 patients per day, and nurse auxiliaries saw less

than eight. Patient volume was lowest in the clinics in the mountain region and the Amazon, with only five to eight physician consultations per day on average, and highest in three of the four clinics in the more densely populated coastal region, where physician consultations averaged 10 to 22 per day. A major reason for the low volume of patients found in the sample clinics is the relatively small number of SSC member households in most of the survey sites, which is due to either low enrollment rates, the small number of households in the clinics' catchment areas, or both. Although not supported by the recall data (see #5 below), another likely factor contributing to the low patient volume is the low rates of utilization of the SSC services by members, especially in certain areas.

5. **Utilization of SSC Services by Member Households.** Despite the low utilization levels recorded by the clinics, recall data from the household survey suggests a relatively heavy reliance on SSC facilities by SSC members for curative care. More than 60 percent of SSC household members reporting illnesses over a two-month period sought care at an SSC clinic, which is a high rate compared to data from other developing countries. It is likely, however, that illnesses were under-reported in the survey, and respondents may have tended to recall mainly more severe illness episodes. This would mean that the number of clinic visits represented a smaller proportion of total illnesses than the recall data indicated, and that therefore, actual utilization rates would be less than 60 percent. Nonetheless, there is strong evidence from the demand analysis that SSC members are considerably more likely to seek care for illnesses than non-members. Other factors, besides membership in the SSC, that were found in the demand analysis to affect the utilization of SSC services include the perceived quality of care at the clinics -- especially the perceived availability of drugs; and the expected distance, travel time and costs of travel to the SSC clinic.
6. **Productivity of SSC Clinic Staff:** Clinic records from the nine sample clinics show that, on average, physicians and nurse auxiliaries spend only 60 percent of their time providing health care (both in the clinics and the communities). Most of the remainder of their time was either unaccounted for (especially in the case of the physicians) or spent on administrative tasks (especially in the case of the nurse auxiliaries). Although these data suggest a certain lack of productivity among clinic staff, they could also be the result of the relatively low volume of patients coming to several of the clinics. The belief that the large amounts of time not seeing patients is more the result of low utilization levels is supported by data showing that physicians are quite productive when they do see patients, seeing between 3.5 and 4.5 per hour.
7. **Referrals to IESS Facilities:** Records from the nine sample clinics indicated that between 1.7 and 8.0, and 5.3 percent, on average, of all visits to physicians resulted in referrals to more sophisticated IESS facilities. The household survey recall data indicates much higher referral rates of one out of every nine visits (11%), on average, to either the physician or nurse auxiliary, which is considered quite high. The demand analysis found that SSC membership rates were positively related to referral rates, lending support to the belief that one reason people join the SSC is to gain access to IESS facilities through referrals. Severely reducing referral rates could therefore result in a decline in SSC membership, although it would save costs. More research into referral rates and patterns at SSC facilities is needed.

8. **Training and Supervision:** Both the clinic records and the perceptions of clinic staff indicate that in-service training for SSC medical staff is very limited (with physicians receiving only 18 hours of training on average in 1993) and may be inappropriate, since the training often focuses on urban hospital care. Supervision, a critical factor in maintaining quality of care, is also insufficient. Physicians in five of the nine sample clinics reported no supervisory visits by central or regional staff during a one-year period, and most nurse auxiliaries reported only one or two visits made during the year. Physicians and nurse auxiliaries interviewed recognized the need for, and expressed interest in, receiving additional training and supervision.
9. **Quality of Care:** Measures of quality of care in this study were limited mainly to the perceptions of patients and providers, and to an inventory of drugs and medical supplies available in the sample clinics at the time of the survey. Both the inventory and interviews with clinic staff indicated that the drug supply system for SSC clinics is inadequate and that stock-outs of essential drugs are common. The lack of medicines was viewed as the main disadvantage of using SSC services by the majority of respondents in the survey, 60 percent of whom rated the availability of medicines in SSC clinics fair or poor. The lack of full-time professional staff (i.e. physicians and dentists) and the fact that they are often not available to handle medical emergencies were also cited in the household survey as major problems with SSC services. On the other hand, SSC members generally gave high ratings for the abilities of the professional staff and the quality of the treatment that they received.
10. **The Costs of SSC Health Services:** The annual costs per member household for the nine sample clinics ranged from 43,000 sucres (US\$21.00) to 163,000 sucres (around \$80.00) for the year 1993, with an average of around 69,000 sucres (US\$33.74). Costs for a visit to the physician averaged 6,801 sucres (US\$3.32), ranging from 3,804 sucres (US\$1.86) to as much as 12,667 sucres (US\$6.19). Visits to a nurse auxiliary cost on average two-thirds as much as visits to physicians (4,653 sucres or US\$2.27), ranging from 1,777 sucres (US\$0.87) to 10,013 sucres (US\$4.90). Dental visit costs were similar to those of visits to nurse auxiliaries. The major reasons for the three to five-fold differences in average costs per household and per visit across clinics are the differences in the size of SSC membership by clinic area, large differences in patient volume, and substantial differentials in staff salaries (especially those of physicians), which together with other labor-related costs, made up on average two-thirds of all clinic-level costs. None of these cost estimates include central and regional administrative and supervisory costs, and thus the actual costs of services are higher than these estimates indicate. Future cost analyses of SSC services need to include estimates of these central and regional-level costs.

11. **The Potential for Increasing Utilization of SSC Health Services:**

- a) **Expanding Membership in the SSC:** As mentioned above, both the utilization data and the demand analysis indicate that the most effective means of increasing utilization of SSC services is to expand the membership of households in the SSC. If the enrollment rates of the survey sites -- which were around 50 percent or less in five of the nine sites -- are typical of the country as a whole, there is considerable potential to expand membership by increasing enrollment rates within existing catchment areas. In other, more remote sites, the clinic catchment areas contain too few households to support a fully utilized health clinic. Expanding the catchment areas of these clinics may be difficult, given the scattered population and transportation difficulties in the rural areas. According to the analysis, there is a strong potential to increase SSC membership if the perceived quality of care -- particularly the availability of medicines -- is substantially improved. Sixty-five percent of non-members expressed a willingness to join the SSC if quality improvements were made. The demand analyses indicated that a substantial improvement in drug availability at the clinics would be the most cost-effective way to increase membership.
- b) **Increasing Utilization among Current SSC Members:** The recall data suggest that current SSC members already make heavy use of SSC services, visiting them on average 60 percent of the time they are ill. These data imply that there is limited potential to increase utilization among current SSC members. However, as mentioned above, it is likely that illnesses were under-reported in the recall data, and that therefore clinic visits actually represented less than 60 percent of total illnesses. This would mean that, in fact, SSC members are visiting SSC clinics less than 60 percent of the time they are ill, and that therefore, the potential for increasing the utilization of SSC clinics among current members may be greater than the data indicate. The demand analysis indicates that quality improvements would theoretically lead to an increase in utilization of SSC services by about one-third over current levels (due to the combined effect of increased utilization by current members and increased membership).²⁴

12. **The Costs of Increasing Utilization:** We have estimated the marginal costs of an additional clinical care visit, which does not include the costs of quality improvements, such as improved drug supplies. Because clinic facilities and personnel appear to be under-utilized, we have assumed that the marginal costs would involve only the added costs for drugs and supplies of treating more patients, assuming that drug supplies remain at the current inadequate levels. The average marginal cost for the nine sample clinics was estimated at 492 sucres (\$US0.24), ranging from 370 sucres (US\$0.18) to 738 sucres (US\$0.36). These estimates suggest that more patients can be served at the typical SSC clinic at little added expense. However, increasing utilization substantially at SSC clinics will require specific policy actions, such as improving the drug supply and other aspects of quality of care at the clinics, given the strong positive relationship found in the

²⁴ The quality improvements were defined in the analysis as a 14 percent increase in the perceived quality of care, as measured by a quality of care index based on consumer perceptions.

demand analysis between consumer perceptions of quality of health care and clinic utilization. The demand analysis estimates that increasing utilization by one-third, as discussed in #11 above, will cost clinics on average an additional 8,600 sucres (US\$4.20) per member household per year to pay for increased drugs and supplies, the equivalent of a 12.5 percent increase in the average clinic's costs.

13. **Paying for Quality Improvements and Willingness to Pay:** The costs of quality improvements, such as improved drug supplies, could be partially covered by increased SSC membership dues. This is indicated by the fact that the majority of SSC members who took part in the household survey expressed a willingness to pay an additional amount in dues if services are improved. Although the added amount that most respondents appeared willing to pay was quite small (200 to 300 sucres per month), this added revenue could pay for a significant portion of the costs of improving drug supplies to the level mentioned above if it were used specifically for that purpose. For instance, an increase of 250 sucres per month or 3,000 per year would cover more than one-third of the estimated cost of 8,600 sucres per household required to increase utilization by one-third through quality improvements, as discussed above. Another means of financing quality improvements would be to institute official user fees, such as charges for drugs or consultations. Although one of the major advantages respondents gave for belonging to the SSC was the fact that visits and drugs are free, the study results suggest that a small percentage of users at most of the sample clinics are already paying fees for either consultations, drugs, or both. The argument for introducing user fees is strengthened by the finding in the demand analysis that increasing out-of-pocket fees would not have a strong effect on the demand for health services.

6.2 RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

1. **Pay incentives to increase the stability of services.** In order to improve the recruitment and retention levels of physicians and other medical staff, the SSC should consider offering them incentives, such as bonuses for working in remote rural locations. Incentives might be based on the level of productivity, the delivery of outreach and preventive services, or other indicators of performance that correspond to national health objectives.
2. **Improve the quality of care by increasing the availability of drugs and supplies at the clinics.** The SSC should focus on substantially improving the availability of drugs and medical supplies at SSC clinics, since the analyses show that among various quality improvements, this one intervention will have the greatest effect on attracting new members and on increasing the utilization of the clinics. Increasing the drug supply is also probably one of the most cost-effective ways that the SSC can improve the health outcomes of all those that use SSC services.
3. **Generate revenues at the clinic level to finance quality improvements.** The funding from the SSC is at present not adequate to pay for quality improvements, such as

improved drug supplies. To fill the funding gap, the SSC could consider allowing or even mandating that clinics introduce modest user fees for consultations and/or drugs, and use the recovered funds to replenish their drug supplies, thereby creating clinic-based Revolving Drug Funds (RDFS). Another option would be to increase the monthly membership dues (to, for example 1,000 to 1,200 sucres), and to allow the individual clinics to keep this added revenue to purchase drugs and other necessities (i.e. revenue sharing). A third option could be to finance drug purchases and other improvements with a combination of user fees and increases in membership dues. This option will allow user fees to increase more gradually and to stay at more modest levels, which should reduce their negative impact on utilization.

4. **Establish a separate drug and medical supply system for the SSC.** To ensure that SSC clinics' drug needs are met and accorded a high priority, the SSC should consider establishing a separate drug and medical supply system, independent from the IESS. If clinic-based Revolving Drug Funds are established, the clinics could purchase their drugs from the SSC. The SSC would also need to supply each clinic with an initial free stock of drugs, which the clinic would charge to patients in order to build up sufficient capital for the RDFS. The clinics should also be given the option of buying drugs from other sources (i.e. on the open market), if the SSC is not able to meet their demands in a timely fashion.
5. **Decentralize the management of the SSC.** The establishment of clinic-based Revolving Drug Funds or other mechanisms to effectively improve quality of care will require decentralizing the management and decision-making of the SSC. In order to create the right incentives for clinics to implement quality improvements, each clinic must be given the authority to manage its own recovered funds (i.e. user fees or a portion of membership dues), and to make its own decisions, within established guidelines, on how these funds can be used. Some clinics, for example, may decide to use part of the recovered funds to train and hire additional paramedical staff (e.g. locally recruited nurse auxiliaries), while others may invest in ways to improve the delivery of preventive services, such as hiring and training Community-Based Distributors to provide family planning services. Community members, such as leaders of the associations belonging to the SSC, should be involved in these decisions. The SSC should consider providing training in financial management and accounting to clinic staff to ensure that recovered funds are properly managed.
6. **Increase the emphasis on preventive health care.** The SSC must substantially improve its delivery of preventive health care services. The SSC should consider providing all clinics with sufficient supplies of vaccines and refrigerators in order to be able to offer immunization services on a routine basis. The SSC should also provide in-service training to all staff in various aspects of preventive health care, including family planning service delivery, immunizations, health education/communications methods, and other appropriate topics. The SSC central and regional levels should find other ways of actively encouraging clinics to increase their preventive health activities, by, for example, supplying them with IEC materials (posters, pamphlets, etc.) and field-based technical assistance. The role of SSC clinics in the provision of family planning should be expanded in conjunction with the USAID-funded family planning project. The clinics should be provided with sufficient supplies of contraceptives, which can be purchased

with recovered funds. Consideration might also be given to linking the SSC with one or more of Ecuador's strong non-government organizations (NGOs) that provide family planning and reproductive health services. Financing support for initiatives in preventive health care may be available to the SSC from donor agencies.

7. **Offer performance-based incentives for clinics.** As a means of improving the motivation for clinics to boost utilization and membership, the SSC could offer clinics performance-based incentives. For example, clinics showing the greatest gains in patient volume or membership, or an increase in preventive health activities, could be given new or additional equipment, or an additional free stock of drugs to further capitalize their Revolving Drug Funds. The additional costs that these incentives would entail could be partially offset by the added revenues resulting from increased membership and utilization. Consideration would have to be made, however, of the difficulty of clinics in more remote or traditional areas of increasing membership or utilization, as compared with clinics in more densely-populated areas.
8. **Invest in the development of clinic personnel.** The SSC should provide more opportunities for in-service training of its clinical staff. The training should be directly relevant to the services that SSC clinics provide, and should be a key part of SSC efforts to improve the quality of services. Training areas could include family planning, IEC/communications, diagnostic-treatment protocols, and other relevant topics.
9. **Strengthen supervisory support for SSC clinics.** SSC's supervision system should be substantially improved. Visits to clinic staff should be more frequent (e.g. three to four times per year, depending on need) and be based on a regular schedule. Supervisors should receive periodic refresher training in effective supervision, communications techniques, and so forth to enhance their effectiveness. Regional or provincial-based supervision (versus central-based) would help ensure the frequency of the supervision, as well as its appropriateness. Supervision tools, such as checklists, should be developed, if they do not currently exist, or if they do, be reviewed and revised to enhance their effectiveness.
10. **Conduct a pilot test to introduce reforms of the SSC.** Before introducing reforms on a nation-wide basis, the SSC might consider conducting a carefully monitored experiment in selected geographic areas in which reforms, such as those suggested in this report, would be tested and their impact carefully assessed. Lessons learned from the pilot test would be incorporated into the design for the nation-wide implementation of reforms.

6.3 AREAS FOR FURTHER RESEARCH

1. Future analyses of the cost of SSC services should be conducted, and should include estimates of central and regional-level costs.
2. Further research on referrals from SSC to IESS facilities should be carried out, including referral patterns, referral rates, and the costs of referrals.

3. Research should be conducted to determine the extent to which clinics are informally charging user fees, what types of fees are being charged and for which types of patients, and the uses of these recovered funds.
4. Since it was beyond the scope of this study to assess the degree of overlap and duplication of services between the SSC and the MSP, this should be investigated in order to determine how and to what extent the SSC should collaborate with the MSP for the provision of services at the local level.

ANNEX 1

FACILITIES SURVEY INSTRUMENT

CENTRO DE ESTUDIOS Y DATOS AV. AMAZONAS 2374 Y E. ALFARO EDIF. FORUM
C E D A T O S TELF.: 553531/553631 TELF. 324 482/ 324 481
Q U I T O GUAYAQUIL

ENCUESTA PARA DISPENSARIOS DEL SSC

I. DATOS DE CONTROL

1.- PROVINCIA: _____ 2.- CANTON: _____ 3.- PARROQUIA: _____
4.- LOCALIDAD O ASENTAMIENTO: _____ 5.- NOMBRE DE LA UNIDAD: _____
6.- No. REGIONAL: _____

BUENOS DIAS/TARDES, MI NOMBRE ES _____ SOY FUNCIONARIO (A) DEL CENTRO DE ESTUDIOS Y DATOS
- CEDATOS -, EMPRESA PRIVADA QUE SE DEDICA A LA INVESTIGACION SOCIO-ECONOMICA DEL ECUADOR. EN ESTOS MOMEN-
TOS ESTAMOS REALIZANDO UN ESTUDIO SOBRE LOS SERVICIOS DE SALUD QUE OFRECE EL SEGURO SOCIAL CAMPESINO.
SERIA TAN AMABLE DE RESPONDERME ALGUNAS PREGUNTAS, SUS RESPUESTAS SERAN CONFIDENCIALES Y SOLO TENDRAN TRA-
TAMIENTO ESTADISTICO. GRACIAS.

II. ANTECEDENTES DEL DISPENSARIO

7.- FUNCIONARIOS ENTREVISTADOS:

TITULO	CARGO	AÑOS TRABAJANDO PARA SSC	AÑOS EN ESTE DISPENSARIO
MEDICO	_____	_____	_____
ODONTOLOGO	_____	_____	_____
AUXILIAR DE ENFERMERIA	_____	_____	_____

8.- CUANTOS AÑOS DE FUNCIONAMIENTO TIENE EL DISPENSARIO?

9.- VIAS DE COMUNICACION:

TERRESTRE _____ FLUVIAL _____ MARITIMA _____ AEREA _____ FERREA _____

10.- TRANSPORTE, TIPO, RECORRIDO, ETC.

11.- DISTANCIA ENTRE LA CABECERA CANTONAL Y EL DISPENSARIO _____

12.- MEDIOS DE COMUNICACION MAS CERCANOS

TELEGRAFO () TELEFONO () CORREO () RADIO () TELEVISION ()

13.- DISPOSICION DE SERVICIOS DE ENERGIA ELECTRICA EN EL DISPENSARIO

PUBLICA () PRIVADA () PERMANENTE () CON HORARIO () NO DISPONE ()

14.- DISPOSICION DE AGUA EN EL DISPENSARIO

POTABLE () ENTUBADA () POZO () BOMBA () CARRO REPARTIDOR ()
RIO () VERTIENTE () ACEQUIA () AGUA LLUVIA ()

15.- DE LA POBLACION AFILIADA QUE PORCENTAJE CORRESPONDE A:

NATIVOS _____ COLONOS _____

16.- ETNIA PREDOMINANTE: _____ RELIGION PREDOMINANTE: _____

SEGUNDA: _____

SEGUNDA: _____

17.- No. DE FAMILIAS EN LA LOCALIDAD: _____ No. DE FAMILIAS BENEFICIARIAS DEL SSC: _____

No. DE PERSONAS EN LA LOCALIDAD: _____ No. DE PERSONAS BENEFICIARIAS DEL SSC: _____

18.- IDIOMA PREDOMINANTE: _____

18.1.- EXISTE ALGUN PROBLEMA DE COMUNICACION CON LOS CAMPESINOS POR EL IDIOMA?

SI () POR QUE? _____

NO ()

III.- PROVISION DE SERVICIOS Y PRODUCTIVIDAD

19.- QUE TIPOS DE ATENCION PRESTA EL DISPENSARIO Y CUANTAS HORAS A LA SEMANA?

TIPO DE PROFESIONAL	ATENCION PACIENTES No. DE HORAS	SERVICIO COMUNITARIO No. DE HORAS	HORARIO DE ATENCION
MEDICO	_____	_____	_____
ODONTOLOGO	_____	_____	_____
AUXILIAR DE ENFERMERIA	_____	_____	_____
OTROS	_____	_____	_____

20.- CUALES SON LOS PROBLEMAS MAS IMPORTANTES QUE IMPIDEN QUE EL TRABAJO SEA MEJOR EN EL DISPENSARIO?

MEDICO _____

ODONTOLOGO _____

AUXILIAR DE ENFERMERIA _____

21.- QUE RESTRICCIONES O DIFICULTADES ENCUENTRA PARA LA REALIZACION DE ACTIVIDADES COMUNITARIAS?

MEDICO _____

ODONTOLOGO _____

AUXILIAR DE ENFERMERIA _____

22.- EN EL DISPENSARIO SE REFIEREN PACIENTES A OTRAS UNIDADES DE SALUD?

SI () NO ()

22.1.- POR CUALES ENFERMEDADES USTEDES REFIEREN A LOS PACIENTES Y LAS CAUSAS PARA REFERIR

ENFERMEDADES	CAUSAS PARA REFERIR
_____	_____
_____	_____
_____	_____
_____	_____

23.- QUE ALTERNATIVAS SUGIERE USTED PARA AUMENTAR LA PRODUCTIVIDAD EN EL DISPENSARIO?

MEDICO _____

ODONTOLOGO _____

AUXILIAR DE ENFERMERIA _____

24.- LOS PROFESIONALES QUE PRESTAN SUS SERVICIOS EN ESTE DISPENSARIO DEL SSC, SE DEDICAN A OTRAS ACTIVIDADES ECONOMICAS?

CARGO EN EL DISPENSARIO SSC	OTRA ACTIVIDAD ECONOMICA	SECTOR PUBLICO	SECTOR PRIVADO
_____	_____	()	()
_____	_____	()	()
_____	_____	()	()
_____	_____	()	()

IV.- DOTACION DE PERSONAL / SUPERVISION

25.- RESPECTO DE LOS SUPERVISORES OCASIONALES, CUAL ES LA FRECUENCIA DE VISITA Y LAS FUNCIONES QUE REALIZAN?

SUPERVISORES OCASIONALES	FRECUENCIA DE VISITA	FUNCIONES
MEDICO	_____	_____
ODONTOLOGO	_____	_____
ENFERMERA	_____	_____

25.1 CREE USTED QUE LOS SUPERVISORES OCASIONALES AYUDAN AL MEJORAMIENTO DE SU TRABAJO Y POR QUE?

MEDICO _____

ODONTOLOGO _____

AUXILIAR DE ENFERMERIA _____

26.- HA RECIBIDO ALGUN ENTRENAMIENTO POR PARTE DEL IESS O DEL SSC?

	SI	NO	CUANDO FUE LA ULTIMA FECHA DEL ENTRENAMIENTO?
MEDICO	()	()	_____
ODONTOLOGO	()	()	_____
AUXILIAR	()	()	_____
OTRO	()	()	_____

26.1 CREEN USTEDES QUE NECESITAN OTRO TIPO DE ENTRENAMIENTO?

	SI	NO	DE QUE CLASE DE ENTRENAMIENTO?
MEDICO	()	()	_____
ODONTOLOGO	()	()	_____
AUXILIAR	()	()	_____
OTRO	()	()	_____

V.- UBICACION DE LA INSTALACION

27.- QUE OTRAS INSTALACIONES DE SALUD SE ENCUENTRAN EN LA ZONA?

INSTALACIONES DE SALUD	PUBLICOS	PRIVADOS	HORARIO DE ATENCION
_____	()	()	_____
_____	()	()	_____
_____	()	()	_____
_____	()	()	_____

28.- CUAL ES EL AREA DE ACCION QUE CUBRE EL DISPENSARIO?

COMUNIDAD	DISTANCIA EN KILOMETROS
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

29.- PROPORCION DE PERSONAS QUE UTILIZAN LOS SERVICIOS DEL DISPENSARIO Y RESIDEN EN EL AREA

	PORCENTAJE	MEDIO DE TRANSPORTE
QUE RESIDEN < MEDIA HORA DEL DISPENSARIO	_____	_____
QUE RESIDEN > MEDIA HORA DEL DISPENSARIO	_____	_____

VI.- INFRAESTRUCTURA FISICA DEL DISPENSARIO Y EXISTENCIAS

30.- DE ACUERDO AL EQUIPO BASICO DE UN DISPENSARIO, EN QUE CONDICIONES CONSIDERA USTED QUE SE ENCUENTRA:

EQUIPO	FUNCIONA		CONDICIONES			AÑOS EXISTENCIA
	SI	NO	BUENAS	REGULARES	MALAS	
EQUIPOS MEDICOS	()	()	()	()	()	_____
MOVILIARIOS	()	()	()	()	()	_____
_____	()	()	()	()	()	_____

30.1.- QUE NECESITAN USTEDES PARA EQUIPAR MEJOR EL DISPENSARIO Y POR QUE?

31.- DE LAS MEDICINAS QUE TIENEN, CUALES SON LAS MAS USADAS EN EL DISPENSARIO O TIENEN EN EXCESO?

MEDICINAS MAS USADAS	TIENEN EN EXISTENCIAS	CONSUMO AL MES	TIEMPO PARA ABASTECERSE
----------------------	-----------------------	----------------	-------------------------

ANTIBIOTICOS

ANTIGRIPALES

ANTIPARASITARIOS

OTROS

MEDICINAS EN EXCESO	TIENEN EN EXISTENCIAS	CONSUMO AL MES	TIEMPO PARA ABASTECERSE
---------------------	-----------------------	----------------	-------------------------

32.- FRENTE AL EXCESO DE MEDICINAS, HA HECHO ALGUNA DEVOLUCION?

SI () NO ()

33.- CUANDO FUE LA ULTIMA VEZ QUE HIZO UNA DEVOLUCION? (MES Y AÑO) _____

GRACIAS POR SU COLABORACION

ENTREVISTADOR: _____

SUPERVISOR: _____

FECHA DE ENTREVISTA: _____

FECHA DE LA SUPERVISION: _____

ANNEX 2

HOUSEHOLD SURVEY QUESTIONNAIRE

CENTRO DE ESTUDIOS Y DATOS
C E D A T O S

AV. AMAZONAS 2374 Y E. ALFARO
TELF.: 553531/553631
Q U I T O

EDIF. FORUM
TELF. 324 482 324 481
GUAYAQUIL

ENCUESTA A HOGARES

BUENOS DIAS/TARDES, MI NOMBRE ES _____ SOY FUNCIONARIO (A) DEL CENTRO DE ESTUDIOS Y DATOS - CEDATOS -, EMPRESA PRIVADA QUE SE DEDICA A LA INVESTIGACION SOCIO-ECONOMICA DEL ECUADOR. EN ESTOS MOMENTOS ESTAMOS REALIZANDO UN ESTUDIO SOBRE LOS SERVICIOS DE SALUD QUE OFRECE EL SEGURO SOCIAL CAMPESINO. SERIA TAN AMABLE DE RESPONDERME ALGUNAS PREGUNTAS, SUS RESPUESTAS SERAN CONFIDENCIALES Y SOLO TENDRAN TRATAMIENTO ESTADISTICO. GRACIAS.

I. DATOS DE CONTROL

1.- PROVINCIA: _____ 2.- CANTON: _____ 3.- PARROQUIA: _____
4.- COMUNIDAD/RECINTO/BARRIO _____ 5.- NOMBRE DE LA UNIDAD: _____
6.- REGIONAL No.: _____
7.-DIRECCION: CALLE/CAMINO/CARRETERA: _____
8.-NOMBRE DEL ENTREVISTADO: _____
9.- QUIEN RESPONDE LA ENCUESTA? JEFE HOGAR (1) MADRE (2) HIJO (3) OTRO (4)
10.- SEXO: H(1) M(2)
11.-EDAD: MENOS DE 25 AÑOS (1) DE 26 A 40 AÑOS (2) MAS DE 40 AÑOS (3)
12.- ESTADO CIVIL: SOLTERO (1) CASADO (2) DIVORCIADO (3) VIUDO (4) UNION LIBRE (5)
13.- GRUPO ETNICO: MESTIZO (1) INDIO (2) NEGRO (3) RELIGION: _____ IDIOMA: _____
14.- NIVEL DE INSTRUCCION

	JEFE HOGAR	MADRE	HIJO	OTRO
ANALFABETO/SIN INSTRUCCION	(1)	(1)	(1)	(1)
NO FUE A LA ESCUELA PERO LEE Y ESCRIBE	(2)	(2)	(2)	(2)
PRIMARIA INCOMPLETA	(3)	(3)	(3)	(3)
PRIMARIA COMPLETA	(4)	(4)	(4)	(4)
SECUNDARIA INCOMPLETA	(5)	(5)	(5)	(5)
SECUNDARIA COMPLETA	(6)	(6)	(6)	(6)
SUPERIOR	(7)	(7)	(7)	(7)

II. DATOS DE SALUD

15.- QUE SERVICIOS DE ATENCION MEDICA CONOCE USTED A LOS QUE PUEDE ACUDIR SU FAMILIA?

LUGARES

1. HOSPITAL GENERAL	()	
2. CLINICA PARTICULAR	()	
3. CENTROS Y SUBCENTROS DE SALUD	()	
4. DISPENSARIOS DEL SSC	()	(SEÑALAR 3 OPCIONES POR ORDEN DE IMPORTANCIA)
5. CURANDERO	()	
6. CASA/COMADRONA/PARTERA	()	
7. DE LA COOPERATIVA O ASOCIACIONES	()	
8. OTROS, CUALES _____		

16.- LA FAMILIA HA TENIDO : (LEA CADA UNA DE LAS ENFERMEDADES) EN LOS ULTIMOS DOS MESES ?

MATRIZ No. 1

TUVO USTED O SU FAMILIA:	SI (1) NO (2)	QUE MIEMBRO DEL HOGAR?	CUANTO TIEMPO DURO?	PERDIO TRABAJO POR ESTAR ENFERMO? SI (1) NO (2)	BUSCO AYUDA MEDICA?		CUANTO PAGO POR LA CONSULTA?	CUANTO PAGO POR MEDICINAS?	SEGURO?		REFERIDO	
					SI () DONDE?	NO () POR QUE?			SI (1)	NO (2)	SI (1)	NO (2)
ENFERMEDADES INFECCIOSAS Y PARASITARIAS (Corrido, fiebre tifoidea, tuberculosis, mal de 7 dias, sarampión)												
TUMORES												
ENFERMEDADES DE GLANDULAS ENDOCRINAS, NUTRICION, DEL METABOLISMO (Coto, desnutrición, gordura)												
ENFERMEDADES DE LA SANGRE (Anemias "palidez" en general)												
TRANSTORNOS MENTALES												
ENFERMEDADES DEL SISTEMA NERVIOSO Y DE LOS ORGANOS DE LOS SENTIDOS (Infección del cerebro que le dejó inconciente, ataques, ceguera o inflamacion de ojos)												
ENFERMEDADES DEL APARATO CIRCULATORIO (Problemas del corazón que lo llevaron al hospital, hinchazon de venas)												
ENFERMEDADES DEL APARATO RESPIRATORIO (Gripes que hayan durado largo tiempo neumonía, asma)												
ENFERMEDADES DEL APARATO DIGESTIVO (Ulcera, dolor de estómago, ardor en el estómago)												
ENFERMEDADES DEL APARATO GENITOURINARIO (Flujo blanco)												
ACCIDENTES												
OTRAS, CUALES?												

QUE MIEMBRO DEL HOGAR?**CUANTO TIEMPO DURO?****BUSCO AYUDA MEDICA?**

JEFE DEL HOGAR
MADRE
HIJO DE 0-1 AÑO
HIJO DE 1-5 AÑOS
HIJO + 5 AÑOS
HIJA 0-1 AÑO
HIJA 1-5 AÑOS
HIJA +5 AÑOS
OTRO

(1) MENOS DE 1 SEMANA/ (1)
(2) MENOS DE 15 DIAS (2)
(3) MENOS DE 1 MES (3)
(4) MAS DE UN MES (4)
(5)
(6)
(7)
(8)
(9)

SI, DONDE?

DISPENSARIO SSC
CENTRO SALUD MSP
HOSPITAL GENERAL
CLINICA PARTICULAR
BRUJO/CURANDERO
COMADRONA/PARTERA
OTRO, CUAL _____

NO, POR QUE?

(1) **SEÑALE HASTA 3 RESPUESTAS**
(2) HORARIO INCONVENIENTE (1)
(3) SE AUTOMEDICO (2)
(4) QUEDA MUY LEJOS (3)
(5) NO TIENEN MEDICINAS (4)
(6) MALA ATENCION (5)
(7) OTRO, CUAL _____ (6)

17.- SU FAMILIA HA RECIBIDO: (LEA CADA SERVICIO) ADEMAS DE ATENDER SUS ENFERMEDADES EN LOS DOS ULTIMOS MESES?

MATRIZ No. 2

SERVICIOS	SI (1) NO (2)	A DONDE FUE?	CUANTO PAGO POR CONSULTA?	SEXO		EDAD	POR QUE UTILIZO ESTE SERVICIO?
				H (1)	M (2)		
1. ATENCION MATERNA (CONTROL EMBARAZO/PARTO)							
2. ATENCION INFANTIL							
3. PLANIFICACION FAMILIAR							
4. SALUD AMBIENTAL							
5. SALUD ESCOLAR							
6. VACUNAS							
7. OTROS							

A DONDE FUE?

DISPENSARIO SSC (1)
 CENTRO SALUD MSP (2)
 HOSPITAL GENERAL (3)
 CLINICA PARTICULAR (4)
 BRUJO/CURANDERO (5)
 COMADRONA/PARTER (6)
 OTRO, CUAL _____ (7)

POR QUE UTILIZO ESTE SERVICIO Y NO OTRO?

(SEÑALE HASTA 3 RESPUESTAS)
 POR ESTAR CERCA (1)
 PORQUE NO PAGO (2)
 POR EL BUEN SERVICIO (3)
 REGALAN MEDICINAS (4)
 NO EXISTE OTRO (5)
 OTRO, CUAL _____ (6)

18.- PODRIA INDICARME SI USTED ESTA AFILIADO AL SEGURO SOCIAL CAMPESINO?:

SI () PASE A PREG. 19 NO () PASE A PREG. 35

III.- AFILIADOS AL SSC

19.- CUAL ES LA DISTANCIA DE SU VIVIENDA AL DISPENSARIO DEL SSC? _____ KM.

19.1 EN QUE TIEMPO LLEGA AL DISPENSARIO? _____

19.2 POR QUE MEDIO O TRANSPORTE LLEGA AL DISPENSARIO? _____

19.3 CUANTO PAGA POR MOVILIZARSE AL DISPENSARIO? _____

19.4 CUANTO PAGA POR LA AFILIACION _____

19.5 CON QUE FRECUENCIA PAGA LA AFILIACION? _____

19.6 A QUIEN LE ENTREGA USTED EL DINERO PARA PAGAR SU AFILIACION AL SSC?

AL TESORERO DE LA ORGANIZACION (1)

AL MEDICO DEL DISPENSARIO (2)

PAGA USTED PERSONALMENTE AL SSC (3)

OTRO, CUAL _____ (4)

20.- LA ULTIMA VEZ QUE RECURRIO AL DISPENSARIO DEL SSC. QUIEN LE ATENDIO?.

MEDICO ()

ODONTOLOGO ()

AUXILIAR ()

OTRO ()

21.- CUANTO TIEMPO ESPERO PARA SER ATENDIDO? _____ HORAS _____ MINUTOS

22.- CUANTO TIEMPO SE DEMORA EL PROFESIONAL EN LA CONSULTA CON UD.? _____ HORAS _____ MINUTOS

23.- DE ACUERDO A SU ENFERMEDAD NECESITO ALGUNOS MEDICAMENTOS?

SI () NO () PASE PREG. 26

24.- LE PROPORCIONARON EL MEDICAMENTO QUE UD. NECESITABA?

SI () PASE PREG. 26 NO () SIGA

25.- EN CASO NEGATIVO, EN DONDE CONSIGUIO EL MEDICAMENTO?

EN LA FARMACIA (1)

EN EL DISPENSARIO DEL MSP (2)

EN OTRO LUGAR, DONDE _____ (3)

26.- COMO CALIFICA USTED A LOS SIGUIENTES ASPECTOS?

(LEA CADA ALTERNATIVA)

C A L I F I C A C I O N
BUENA REGULAR MALA NS/NR
() () () ()

1.- LA CERCANIA AL LUGAR DE CONSULTA

() () () ()

2.- TIEMPO DE ESPERA EN LA ULTIMA VISITA AL DISPENSARIO

() () () ()

3.- TRATO RECIBIDO DEL MEDICO,
ODONTOLOGO O DEL AUXILIAR QUE
LE ATENDIO LA ULTIMA VEZ

() () () ()

4.- PREPARACION O CAPACIDAD DEL MEDICO,
ODONTOLOGO O AUXILIAR QUE LE ATENDIO

() () () ()

5.- DISPONIBILIDAD EN EL DISPENSARIO DE LA MEDICINA ADE

() () () ()

6.- DISPONIBILIDAD EN EL DISPENSARIO DE EQUIPOS MEDICOS

() () () ()

7.- LOS EFECTOS EN SU ESTADO DE SALUD
A PARTIR DE LA ATENCION QUE RECIBIO

() () () ()

8.- LOS HORARIOS DE ATENCION EN EL DISPENSARIO

() () () ()

27.- CUAL ES EL HORARIO DE ATENCION DEL DISPENSARIO Y DE LOS PROFESIONALES PARA LAS PERSONAS DE SU ORGANIZACION
DIA DE LA SEMANA HORA DE ATENCION

DISPENSARIO

MEDICO

ODONTOLOGO

AUXILIAR

28.- RESPECTO A LOS PROFESIONALES QUE TRABAJAN EN EL DISPENSARIO, CUANDO SE ENCUENTRAN ELLOS:

	SIEMPRE	LA MAYORIA DE LAS VECES	ALGUNA VEZ	NUNCA
MEDICO	()	()	()	()
ODONTOLOGO	()	()	()	()
AUXILIAR	()	()	()	()

29.- QUE VENTAJAS TIENE LA ATENCION EN EL SSC Y NO EN OTRO LUGAR?

NO PAGO POR CONSULTA NI MEDICINAS	(1)	
LOS PROFESIONALES SON BUENOS	(2)	
POR LA CERCANIA DE LA CASA	(3)	(MARQUE HASTA 3 OPCIONES)
SE EVITA GASTOS DE SALIR A LA CIUDAD	(4)	
OTRO, CUAL _____	(5)	

29.1- QUE ES LO MALO QUE TIENE ATENDERSE EN EL SSC Y NO EN OTRO LUGAR?

EL MEDICO/ODONTOLOGO/AUXILIAR NO ESTAN PERMANENTE	(1)
NO TIENEN MEDICAMENTOS EN EL DISPENSARIO	(2)
IMPLICA MAS GASTOS	(3)
NO HAY EMERGENCIAS MEDICAS	(4)
OTRO, CUAL _____	(5)
NINGUNO	(6)

30.- ESTARIA USTED DISPUESTO A PAGAR POR UN MEJOR SERVICIO?

SI () PASE A PREG. 30.1 NO () PASE A PREG. 32

30.1 QUE ES PARA USTED UN MEJOR SERVICIO? (ESCOGER 3 RESPUESTAS POR ORDEN DE IMPORTANCIA)

QUE HAYA MAS HORAS DE ATENCION	()
QUE HAYA MAS MEDICAMENTOS	()
QUE LE ATIENDAN MAS Y MEJORES MEDICOS	()
QUE ESTE MAS CERCA DE LA CASA	()
QUE HAYA MAYORES SERVICIOS	()
OTRO, CUAL _____	()

31.- HASTA CUANTO ESTARIA USTED DISPUESTO A PAGAR POR UN MEJOR SERVICIO? S/. _____

32.- EN LOS ULTIMOS DOS MESES HA RECIBIDO ALGUNA VISITA DEL MEDICO DEL SEGURO SOCIAL EN SU HOGAR?

SI () NO ()

33.- CONOCE USTED SI EL PERSONAL DEL DISPENSARIO DEL SSC EN LOS ULTIMOS DOS MESES HA HECHO DIFUSION SOBRE LOS SERVICIOS QUE PRESTA EL DISPENSARIO?

SI () SIGA NO () PASE A PREG. 34

QUIEN REALIZO ESTA DIFUSION?	QUE TOPICO DE DIFUSION
MEDICO ()	_____
ODONTOLOGO ()	_____
AUXILIAR ()	_____
OTRO ()	_____

33.1.- ACUDE USTED A LAS REUNIONES DE PROMOCION SOCIAL?

SI () NO ()

34.- CUANDO USTED O SU FAMILIA NO VAN AL SSC A QUE LUGAR ACUDE?

LUGARES

1. HOSPITAL GENERAL	(1)	
2. CLINICA PARTICULAR	(2)	
3. CENTROS Y SUBCENTROS DE SALUD	(3)	
4. CURANDERO	(4)	(SEÑALAR 3 OPCIONES)
5. COMADRONA/PARTERA	(5)	
6. DE LA COOPERATIVA O ASOCIACIONES	(6)	
7. OTROS, CUALES _____	(7)	
8. NINGUNO	(8)	

34.1 POR QUE ACUDE A ESTE LUGAR Y NO A OTROS NI AL DISPENSARIO DEL SSC?

POR ESTAR CERCA	(1)	
PORQUE NO PAGA	(2)	
POR EL BUEN SERVICIO	(3)	(SEÑALAR 3 OPCIONES)
REGALAN MEDICINAS	(4)	
NO EXISTE OTRO	(5)	
OTRO, CUAL _____	(6)	PASE PREG. 46

IV.- NO AFILIADOS Y DESAFILIADOS DEL SSC

35.- GENERALMENTE A DONDE ACUDE CUANDO UD. O SU FAMILIA SE ENFERMAN?

LUGARES

1. HOSPITAL GENERAL (1)
2. CLINICA PARTICULAR (2)
3. CENTROS Y SUBCENTROS DE SALUD (3)
4. DISPENSARIOS DEL SSC (4) (SEÑALAR 3 OPCIONES)
5. CURANDERO (5)
6. CASA/COMADRONA/PARTERA (6)
7. DE LA COOPERATIVA O ASOCIACIONES (7)
8. OTROS, CUALES _____ (8)
9. NINGUNO (9) PASE A PREG. 38

35.1 POR QUE ACUDE A ESTE LUGAR Y NO A OTROS ?

- POR ESTAR CERCA (1)
- PORQUE NO PAGA (2)
- POR EL BUEN SERVICIO (3) (SEÑALAR 3 OPCIONES)
- REGALAN MEDICINAS (4)
- NO EXISTE OTRO (5)
- OTRO, CUAL _____ (6)
- NINGUNO (7) PASE PREG. 38

36.- COMO CALIFICA USTED A LOS SIGUIENTES ASPECTOS?

(LEA CADA ALTERNATIVA)

C A L I F I C A C I O N			
BUENA	REGULAR	MALA	NS/NR
()	()	()	()

- 1.- LA CERCANIA AL LUGAR DE CONSULTA () () () ()
- 2.-TIEMPO DE ESPERA EN LA ULTIMA VISITA AL LUGAR () () () ()
- 3.- TRATO RECIBIDO DEL MEDICO,
ODONTOLOGO O DEL AUXILIAR QUE
LE ATENDIO LA ULTIMA VEZ () () () ()
- 4.- PREPARACION O CAPACIDAD DEL MEDICO,
ODONTOLOGO O AUXILIAR QUE LE ATENDIO () () () ()
- 5.- DISPONIBILIDAD EN EL LUGAR DE LA MEDICINA ADECUADA () () () ()
- 6.- DISPONIBILIDAD EN EL LUGAR DE EQUIPOS MEDICOS () () () ()
- 7.- LOS EFECTOS EN SU ESTADO DE SALUD
A PARTIR DE LA ATENCION QUE RECIBIO () () () ()
- 8.- LOS HORARIOS DE ATENCION EN EL LUGAR () () () ()

37.- QUE DISTANCIA HAY DE SU VIVIENDA A ESE LUGAR? _____ KM.

37.1 EN QUE TIEMPO LLEGA ALLA? _____

37.2 POR QUE MEDIO DE TRANSPORTE LLEGA A ESE LUGAR? _____

37.3 CUANTO PAGA POR MOVILIZARSE A ESE LUGAR? _____

37.4 ALGUNA VEZ HA IDO A OTROS LUGARES CUANDO USTED NECESITA ASISTENCIA MEDICA?

SI ()

NO () PASE PREG. 38

LUGARES

1. HOSPITAL GENERAL (1)
2. CLINICA PARTICULAR (2)
3. CENTROS Y SUBCENTROS DE SALUD (3)
4. DISPENSARIOS DEL SSC (4)
5. CURANDERO (5) (SEÑALAR 3 OPCIONES)
6. CASA/COMADRONA/PARTERA (6)
7. DE LA COOPERATIVA O ASOCIACIONES (7)
8. OTROS, CUALES _____ (8)

37.5 POR QUE ACUDE A ESTE LUGAR Y NO A OTROS ?

- POR ESTAR CERCA (1)
- PORQUE NO PAGA (2)
- POR EL BUEN SERVICIO (3) (SEÑALAR 3 OPCIONES)
- REGALAN MEDICINAS (4)
- NO EXISTE OTRO (5)
- OTRO, CUAL _____ (6)
- NINGUNO (7) PASE PREG. 38

38.- ESTUVO ALGUNA VEZ AFILIADO AL SSC?

SI () CONTINUE NO () PASE PREG. 43

39.- HACE QUE TIEMPO SE DESAFILIO? _____

39.1 CUALES FUERON LAS RAZONES DE SU DESAFILIACION? _____

40.- LE GUSTARIA VOLVERSE A AFILIAR?

SI () POR QUE? _____

NO () POR QUE? _____

41.- QUE CAMBIOS DEBERIAN HACERSE EN EL SSC PARA QUE USTED SE VUELVA A AFILIAR?

42.- ESTAN UD. Y SU FAMILIA AFILIADOS A OTRO SEGURO DE SALUD?

SI () NO () PASE PREG. 46

A CUAL? _____

CUANTO PAGA? _____ CADA CUANTO PAGA? _____ PASE PREG. 46

43.- HA CONSIDERADO USTED LA POSIBILIDAD DE AFILIARSE AL SEGURO SOCIAL CAMPESINO?

SI () CONTINUE NO () POR QUE? _____

43.1 POR QUE NO SE HA AFILIADO TODAVIA? _____

44.- QUE CAMBIOS DEBERIAN HACERSE EN EL SSC PARA QUE USTED SE AFILIE?

45.- ESTAN UD. Y SU FAMILIA AFILIADOS A OTRO SEGURO DE SALUD?

SI () NO () PASE PREG. 46

A CUAL? _____

CUANTO PAGA? _____ CADA CUANTO PAGA? _____ SIGA

V._ SERVICIOS BASICOS Y ACTIVIDAD ECONOMICA

46.- QUE VIAS DE ACCESO TIENE A SU VIVIENDA?

TERRESTRE ()

FLUVIAL ()

FERREA ()

OTRA, CUAL? _____ ()

47.- TENENCIA DE LA VIVIENDA

PROPIA ()

ALQUILADA ()

PRESTADA ()

OTRO, CUAL _____ ()

48.- MEDIOS DE COMUNICACION A LOS QUE TIENE ACCESO:

TELEGRAFO ()

TELEFONO ()

CORREO ()

RADIO ()

T.V. ()

OTRO ()

49.- QUE SERVICIOS DE ENERGIA ELECTRICA DISPONE EN SU VIVIENDA?

SERVICIO PUBLICO () SERVICIO PRIVADO ()

49.1 Y ESTE SERVICIO ES: PERMANENTE () POR HORAS () NINGUNO ()

50.- QUE SERVICIO DE AGUA DISPONE USTED EN SU VIVIENDA?

AGUA POTABLE () ENTUBADA () POZO () BOMBA ()

CARRO REPARTIDOR () RIO () VERTIENTE () AGUA LLUVIA () NINGUNO ()

51.- DISPONE DE LETRINA?

SI: COMUN () PRIVADA () NO ()

52.- CUANTAS PERSONAS VIVEN EN SU CASA? _____

DE ESTOS, CUANTOS SON:	HOMBRES	MUJERES	TOTAL
MENORES DE UN AÑO	_____	_____	_____
DE 1 A 5 AÑOS	_____	_____	_____
DE 6 A 14 AÑOS	_____	_____	_____
DE 15 A 49 AÑOS	_____	_____	_____
MAS DE 50 AÑOS	_____	_____	_____

53.- CUAL ES LA PRINCIPAL ACTIVIDAD ECONOMICA DE SU FAMILIA?

AGRICULTURA ()
 GANADERIA ()
 COMERCIO ()
 ARTESANIA ()
 OBRERO/PEON/ASALARIADOS ()
 TRABAJADORES POR CTA. PROPIA ()
 OTRA, CUAL _____

54.- CUAL ES EL INGRESO MENSUAL EN PROMEDIO SOLO DEL JEFE DE FAMILIA?

MENOS DE 30 MIL ()
 DE 30 A 50 MIL ()
 DE 50 A 80 MIL ()
 DE 80 A 100 MIL ()
 DE 100 A 200 MIL ()
 MAS DE 200 MIL ()

55.- CUAL ES EL INGRESO FAMILIAR PROMEDIO DE TODOS LOS QUE TRABAJAN EN SU HOGAR?

MENOS DE 66 MIL ()
 DE 66 A 100 MIL ()
 DE 100 A 150 MIL ()
 DE 150 A 200 MIL ()
 DE 200 A 300 MIL ()
 MAS DE 300 MIL ()

56.- CUALES FUERON LOS GASTOS DE SU FAMILIA EN EL ULTIMO MES?

TIPO DE GASTO	GASTO DEL ULTIMO MES
ALIMENTACION FAMILIAR	S/. _____
VIVIENDA (ARRIENDO)	S/. _____
SALUD(ATENCION MEDICA)	S/. _____
ARTICULOS DE USO PERSONAL	S/. _____
VESTIDO	S/. _____
TRANSPORTE	S/. _____
FESTIVIDADES	S/. _____
EDUCACION	S/. _____
OTROS	S/. _____

GRACIAS POR SU COLABORACION

ENTREVISTADOR: _____

SUPERVISOR: _____

FECHA DE ENTREVISTA: _____

FECHA DE LA SUPERVISION: _____

ANNEX 3: DETAILS ON THE COSTING METHODOLOGY

Exhibit A1 shows line item cost data by SSC clinic for 1993. Personnel expenditures were gathered from the central SSC office. As most doctors worked at more than one clinic throughout the year, it was necessary to pro-rate their salary according to the amount of time spent at the sample clinics. This pro-rating was based on annual hours worked obtained from the central SSC office as well as annual hours worked at each sample clinic. The dentists' salary was also pro-rated as they worked an average of 2 months a year per clinic. The exception was the dentist at San Pablo who worked for 6 months.

The two major categories of capital costs are building and equipment. The values of the equipment were collected via a survey instrument/interview guide described in section 2.1. Since the buildings of the SSCs are standard in size and construction, information on the square meters and the construction material was supplied by the Architecture Department of the SSC. The current prices or replacement costs were then calculated based on the price index of the construction sector. For the two clinics which are not housed in a permanent structure belonging to the SSC, Campanacocha and San Pablo 3, the value of the buildings was imputed. As the researchers reported these temporary clinics to be housed in sub-standard accommodations, the lowest of the three SSC building values was used.

The basic principle for the allocation of the costs of capital resources is to allocate during a particular period only the portion of the total value that corresponds to the given period, typically one year. The assumptions here are that a building has a useful life of 20 years, and furniture and equipment have a useful life of 10 years. Using current values shown in Exhibit A1 for the building, office furniture, dental equipment, medical equipment and medical instruments, the annualized value of these capital items was calculated according to standard methodology. The estimated total useful life of a building was taken to be 20 years, whereas the useful life of equipment, furniture and instruments was taken to be 10 years. An interest rate of 10 percent was used, which reflects the opportunity costs of capital to SSC. An annualization factor corresponding to 20 year (10 year) useful life for buildings (equipment) and 10 percent interest rate was obtained from a standard annualization table (Janowitz and Bratt 1994). For example, a useful life of 20 years and an interest rate of 10 percent yields a factor of 8.514. The annual cost of the article is computed by dividing its current value by the appropriate factor. For the building at the Llactahurco clinic, valued at 42,474,380 sucres, dividing by the factor of 8.514 yields an annualized value 4,988,769 sucres. The annualized cost of the land (its rental value) was calculated assuming a 10 percent interest rate. The sum of the annualized costs of the building and land were used in the costing exercise. The annualization factor of 6.145, which corresponds to a 10 year useful life and a 10 percent interest rate, was applied to equipment, furniture and instruments to calculate their annual cost.

The costs of operating the buildings should include the use of services such as electricity, water, and minor repairs. These costs were not well known by the local officials, and thus were not included in the costs. The assumption is that these costs would be relatively small in relation to the capital costs and other costs which were recorded.

Exhibit A1: Line Item Cost Data by SSC Clinic for 1993 (in Suces)

EXPENDITURES	CLINIC:								
	Llactahurco	San Antonio de Alao	Uzhar	Tumbunuma	El Quingue	El Aji	San Vicente	San Pablo	Campana-cocha
PERSONNEL									
Doctor	5,900,014	6,107,625	8,255,281	2,701,251	1,917,883	2,664,587	9,879,236	10,583,386	3,611,162
Dentist	1,850,677	957,808	0	1,560,371	0	1,756,720	1,650,314	4,964,605	1,856,045
Nurse Auxiliary	7,173,957	7,554,561	7,354,474	1,721,475	7,657,558	5,662,281	5,965,244	7,524,505	8,555,951
SUPPLIES									
Drugs (minus overstock)	1,147,090	834,193	1,292,305	793,117	1,694,073	886,249	763,917	2,720,137	521,304
Medical Supplies	112,143	100,724	190,742	67,827	999,281	194,383	194,383	248,485	230,890
Dental Supplies	331,717	331,717	0	331,717	0	331,717	331,717	331,717	331,717
Office Supplies	14,510	224,046	7,499	1,153	166,541	0	0	49,066	4,772
BUILDING AND LAND									
Building	42,474,380	42,474,830	37,249,000	42,474,380	42,474,380	42,474,380	42,474,830	37,249,000	39,249,000
Land	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
EQUIPMENT									
Office Furniture	4,973,990	4,021,700	4,087,990	3,710,200	3,993,990	4,146,500	4,438,300	2,472,320	8,403,700
Dental Equipment	1,677,883	1,677,883	0	10,067,300	0	1,677,883	10,067,300	1,677,883	1,677,883
Medical Equipment	3,880,800	3,750,000	4,165,800	4,630,000	3,975,800	3,975,800	3,975,800	3,740,000	6,287,300
Medical Instruments	4,530,971	4,476,996	4,690,505	4,545,494	4,947,398	4,309,544	4,584,250	3,720,380	4,495,165

Exhibit A2: Breakdown of Dentists' Recorded Time by Type of Activity, 1993

Clinic	Clinical Care:								Health Education		Home Visits		Administration		Training		Time Not Allocated**		Total	
	Examination No.	%	Preventive* No.	%	Treatment** No.	%	Extractions No.	%												
Lactahurco	52	21%	43	17%	37	15%	42	17%	25	10%	0	0%	44	18%	1	0%	4	2%	248	100%
San Antonio de Alao	22	24%	17	19%	16	18%	20	22%	2	2%	1	1%	12	13%	1	1%	0	0%	91	100%
Uzhar (no dentist)	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Tumbunuma	24	11.1%	25	11.6%	28	13.0%	21	10%	0	0.0%	17	8%	42	19.4%	5	2.3%	54	25.0%	216	100%
El Quingue (no dentist)	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
El Aji	23	9.6%	41	17.2%	0	0.0%	6	3%	10	4.2%	26	11%	17	7.1%	3	1.3%	113	47.3%	239	100%
San Vicente 3	40	16.3%	39	15.9%	0	0.0%	9	4%	52	21.2%	19	8%	15	6.1%	3	1.2%	68	27.8%	245	100%
San Pablo 3	97	7.0%	148	10.7%	1	0.1%	103	7%	71	5.1%	179	13%	156	11.2%	16	1.2%	616	44.4%	1387	100%
Campanacocha	22	19.3%	10	8.8%	8	7.0%	10	9%	6	5.3%	9	8%	29	25.4%	2	1.8%	18	15.8%	114	100%

* Includes cleaning and prophylaxis

** Includes fillings and other dental operations.

REFERENCES

- Gomez, Luis Carlos, editor. 1987. *Costos de los Servicios Basicos de Salud en Ecuador*. Health Care Financing in Latin America and the Caribbean. Research Report No. 4. State University of New York at Stony Brook, NY (August).
- Janowitz, Barbara and John H. Bratt. 1994. *Methods for Costing Family Planning Services*. United Nations Population Fund, New York and Family Health International, Research Triangle Park, North Carolina.
- Knowles, James. 1995. "A Study of Demand for Rural Health Services in Ecuador." HFS Technical Note No. 41, Draft.
- Reynolds, Jack and K. Celeste Gaspari. 1985. *Cost-Effective Analysis*. Primary Health Care Operations Research (PRICOR) Monograph Series, Operations Research Methods. Chevy Chase, Maryland: Center for Human Services, May.
- Zschock, Dieter and Estupinan, Jazmina. 1994. Organization and Financing of the Rural Social Insurance in Ecuador. HFS Technical Report No. 12.